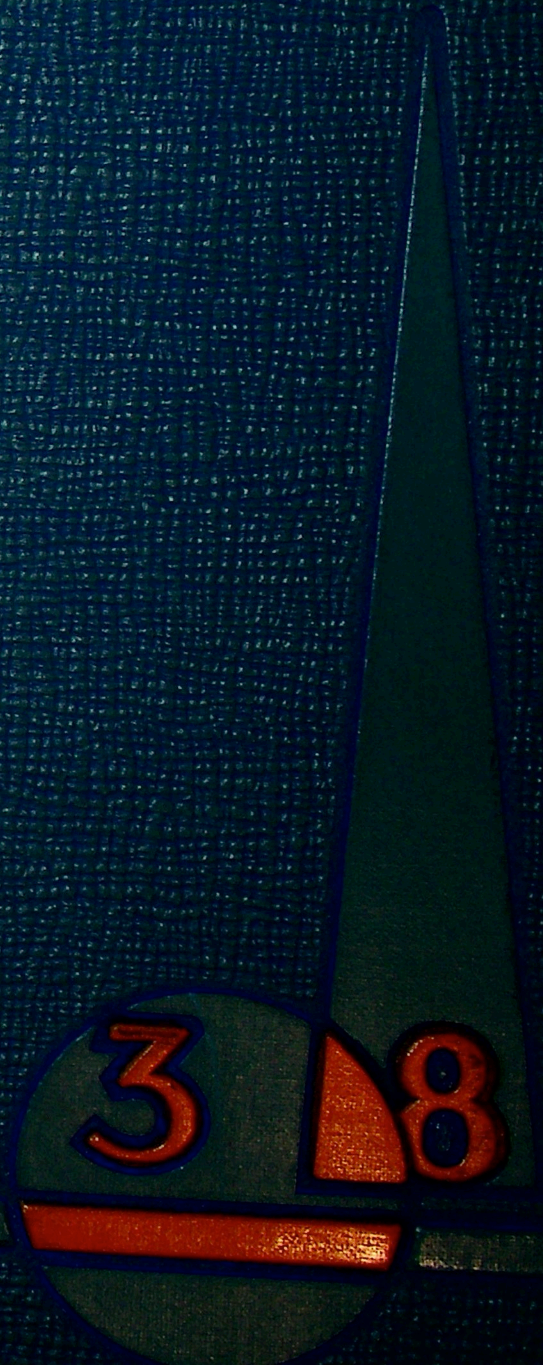
THE CABLE



1938

R. C. BRUMFIELD

LIMITED EDITION
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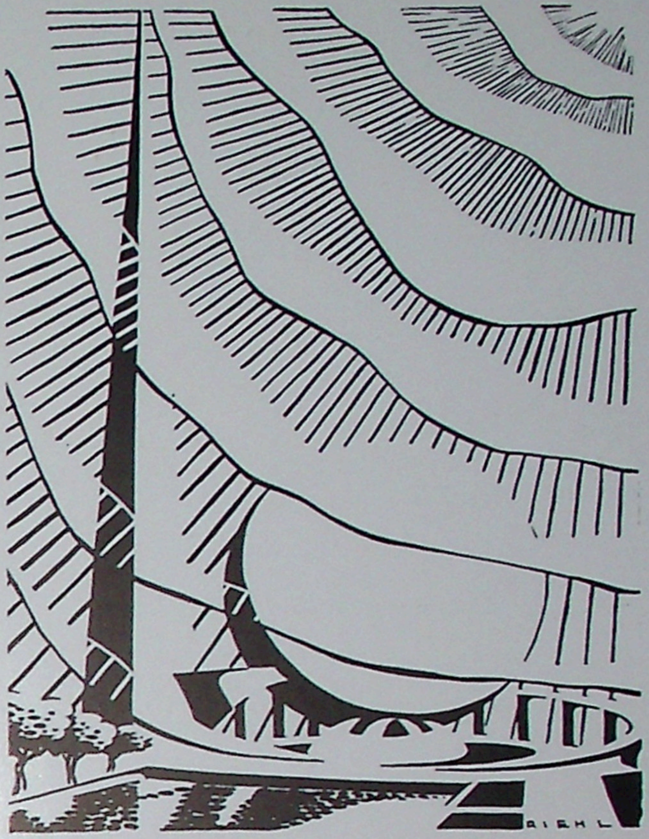

THE 1938 CABLE PRESENTS AS ITS THEME THE ASPECTS OF THE 1939 WORLD'S FAIR OF PARTICULAR INTEREST TO ENGINEERING, ART AND ARCHITECTURE STUDENTS. THE INSPIRING SLOGAN "BUILDING THE WORLD OF TOMORROW" IS CONCRETELY ASSOCIATED WITH THE WORLD'S FUTURE BUILDERS — THE STUDENTS OF TODAY.

1938 CABLE

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THE THEME

THE WORLD'S FAIR
NEW YORK 1939

THE 1938 Cable has selected as its theme the New York World's Fair of 1939. Based upon the central idea, "Building the World of Tomorrow," the Fair is inevitably tied up with the student of today whose job it will be to build that world of tomorrow.

Especially is this true of Cooper Union students—the future architects, engineers and artists who shall construct the buildings, build the bridges, pioneer the new forms of transportation, and design the future accoutrements that will be an integral part of the lives of tomorrow.

We have chosen several pertinent features of the World's Fair that shall present a general picture of the conditions one may expect in this world of the future. The first real evidence of the existence of the Fair—the Motorcade—is described in some detail as an introductory summary of the various features incorporated in the Fair.

The World of Tomorrow is summarized by the manifestations at the exhibitions. From the general theme, we proceed to the specific part played by the Engineer, the Artist, and the Architect in the new world.

Next, several general but interesting aspects of the Fair are considered in the light of what they indicate for the future. The participation of the Nations of the World is discussed and the light such participation casts upon the degree of industrial, cultural and economic development of the various nations is revealed.

The Amusements of the Future are portrayed in the various recreational exhibitions at the Fair. Finally, the participation of Business and Industry in the Fair, and the aspect Business and Industry will assume in the future is indicated.

The inspirational value of this 1939 World's Fair is unlimited to the student and to the graduate. He is shown this new world that he will inhabit and will aid in building. The tools that are at hand are Science and Art. With these tools and with the impressive prospect of the "World of Tomorrow," the student may go forth inspired by the exhibitions and his imagination to build a world even better than the one pictured.

TO DR. EDWIN SHARP BURDELL, NEW DIRECTOR OF THE COOPER UNION. A MAN PECULIARLY ADAPTED TO FILL THIS POSITION BY DINT OF HIS WIDE EXPERIENCE WITH HUMANITY; BY REASON OF THE ENERGY AND ABILITY HE HAS DISPLAYED AND BECAUSE HE IS DESTINED TO WIN THE CONFIDENCE OF THE STUDENT BODY, STRENGTHEN FACULTY-STUDENT TIES AND PROMOTE A TRUE SCHOOL SPIRIT.

Dedication

AT the beginning of its eightieth academic year, the Cooper Union welcomes a director—chosen to coordinate the activities of the school. Elected by the trustees to carry out this work is Dr. Edwin Sharp Burdell who brings to Cooper Union a unique record of past accomplishments. In the following paragraphs a few of the highlights of his career are presented.

It was in Columbus, Ohio, forty years ago, that Edwin Sharp Burdell first saw the light of day. His father, William F. Burdell, was a banker who saw to it that his son received a liberal education. After his preliminary schooling, young Burdell attended the Massachusetts Institute of Technology. His work was interrupted by the great war in which he served as a second lieutenant of infantry and it was not until 1920 that he graduated. He continued his studies at the Graduate School of Business Administration at Harvard University. It was some years later, in 1929, that he received his M.A. degree from the Ohio State University. Five years had elapsed from this date when he received his Ph.D. at the same institution.

After leaving Harvard, Edwin Burdell taught at M.I.T. in the Department of English and History. He then became interested in the problems confronting urban areas and made extensive studies in city planning and housing, criminology, and penology, following which, he held several posts in these fields. He was chairman of committees of the Municipal Housing Committee of Columbus, chairman of the National Committee on Instruction and Research in Housing, technical adviser to the State Planning Board of Massachusetts, and is at present special adviser to the administrative section of the Federal Housing Administration for the New England Region.

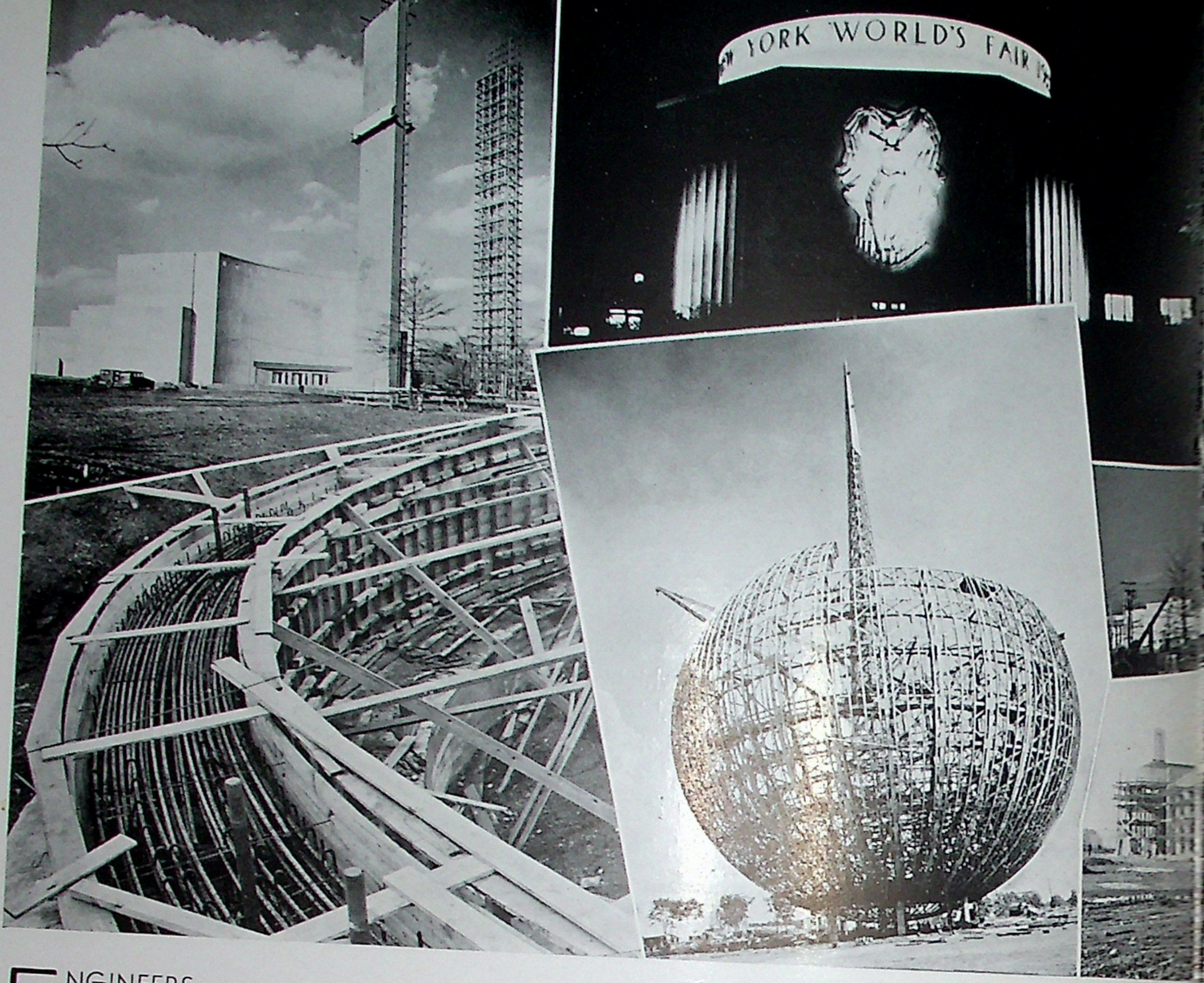
DR. E. S. BURDELL

He also directed, with the aid of a faculty committee, the cultural courses which as general studies have long been part of the Institute's regular curriculum. These include literature and the fine arts, history of civilization, history of science and thought, and social science.

Interspersed between the preceding duties were several other positions which Edwin Burdell held. He was assistant secretary-treasurer of the State Savings Bank and Trust Company of Columbus, Ohio, vice-president of the Cape Oil and Steamship Company, State Administrator of the Ohio Emergency Schools Administration to mention a few of the more important.

Dr. Burdell joined the faculty of M.I.T. in 1934 as associate professor of sociology in the Department of Economics and Social Science after a period at Ohio State University as an instructor in sociology. Three years later, he was chosen Dean of the Humanities with the rank of full professor and with administrative responsibility for the Division of Humanities which includes the Departments of English and History, Modern Languages, Economics and Social Science.

It is from this latter position that the Cooper Union receives Dr. Burdell. The preceding description has only touched the surface of his accomplishments but it has served to indicate the scope of his activities. The school may well be proud to have such a man as its director.

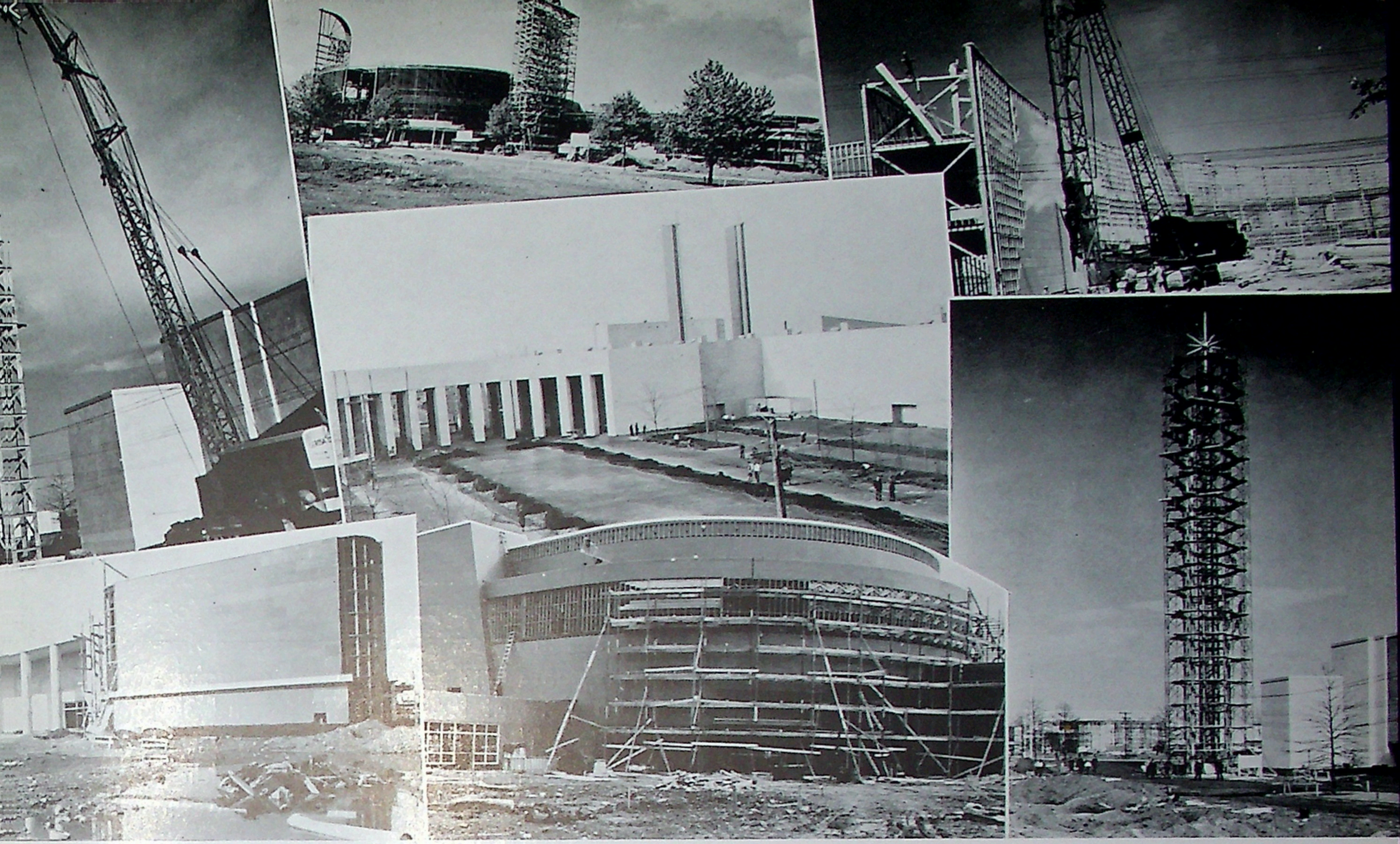


ENGINEERS, carpenters, steel workers, architects, brick layers, dashing about the huge buildings under construction on Flushing Meadows like little ants around a huge hive, constructing this mighty world of tomorrow.

The huge, modern buildings themselves gradually take shape. The tall spire of the trylon pierces into the heavens. The rounded shape of the perisphere takes form.

Here and there a completed building is seen—a sign of the fulfillment of a dream. For every building on the fair grounds was at one time merely a dream of an architect.

Slowly, but with measured progress, these dreams are coming to fulfillment. The foundation is laid in the muck of Flushing Meadows (now so well filled in, that no one would ever know there once was a swamp here). A steel skeleton is built upon this concrete pelvis, and then the outside clothing is placed upon the steel body. The internal vitals are inserted. The building takes its final shape, and another part of the mighty project is built.



A Mighty Project
In the Making

The Motorcade

THE first actual sign of the World's Fair was one of the most impressive parades that New York has ever seen in its entire history. The Motorcade, as its name implies, was entirely mechanical. There were at least 300 floats and 300 other vehicles. The leaders of the country's industries took part. There were enough soldiers and sailors there to defend successfully the United States from any type of invasion.

This parade was not, as most New Yorkers believe, an entirely local affair. In truth, there were 64 foreign nations participating. Dignitaries from every foreign country were present. One of the divisions from Queens had at least 200,000 persons in line.

Thrilling spectacle though it was, with its many floats practically covered with bathing beauties, bands, and futuristically designed machinery, the motorcade was most interesting as an example of the rapid advances science had made in the many fields represented in it.

The World's Fair preview started promptly and led by Major General William N. Haskell, stepped briskly up Broadway from the Battery into a blizzard of ticker tape cascading from the towering buildings of the financial district.

First came two streamlined, chromeplated RCA television trucks, giving the crowd a taste of how they might see and hear such events in a completely mechanized future. Then came the police escort, and then —the parade.

The first of the many divisions in line was composed almost entirely of military units. Five of the army's latest model tanks were followed by motor vehicles carrying anti-aircraft guns, searchlight and "mechanical ears."

Next came the first of the decorative and symbolic floats, in the section of the procession devoted to telling the theme of the Fair. It began with two floats from the "World of Yesterday." These contained a band of fifty men dressed in the blue and gold of the Continental Army, and also figures representing George Washington and other revolutionary leaders.

They were followed by a "World of Tomorrow" float which carried models of the futuristic trylon and perisphere, with gaily clad girls throwing colored balloons to the crowd. Next came the various motorized equipment of the Fair. Six of these were Fair-built mystery floats, large affairs covered with canvas not to be unveiled until they reached the reviewing stand at the Exposition Site. Other floats carried large sized models of Fair buildings.

The third division featured foreign participation with a Polish band leading the group and a Greek band bringing up the rear. There were gaily decorated floats with bands, dancers, and singers in colorful native costume. Two floats contained children carrying flags of more than sixty nations.

"Building the World of Tomorrow" was the theme of the fourth division of motorized floats that moved through the City. It featured industrial life throughout the nation. The American Bridge Company showed men working on a section of bridge framework. Labor unions were well represented with bands, banners, and floats. Plant nurseries, concrete mixing companies, lumber firms, builder's supply companies and building contractors all added their representation to the vast procession. The prize winner in this division was a flower bedecked spring fantasy charmingly arrayed with young maidens.

It was the fifth division with food as its theme that offered the largest number of floats. One of the most colorful of all carried a huge cornucopia, symbol of plenty, from which chiffon clad buffoons threw balloons shaped like ripe fruits. Louis Sherry's float with pretty girls sitting at tables being served wines by redcoated waiters won the prize in this division. Borden showed a cow and two calves having lunch, milk of course,—as they passed.

The most spectacular float in the Distribution division was prepared by Bloomingdale's. It consisted of an old street car with a policeman and passengers in the dress of the Gay Nineties.

Symbolic figures of horses were used to represent electric power made by a huge turbine all on the float prepared by Westinghouse.

Other fields represented were Community Interests, Sports, Transportation, and Advertising. Babe Ruth, and Jack Dempsey were present from the Sporting world.

Bringing up the rear was a fleet of cars that were to scatter throughout the 48 states as heralds of the Fair. Each car carried a uniformed messenger from the Fair and also a model of the Court of State buildings where the states will place their official exhibits. When these 48 cars reached the reviewing stand on the World's Fair grounds in Flushing Meadows Park, the messengers received their orders and the 48 cars sped away to the 48 capitols of the states to present each governor with an invitation to participate in the Fair.

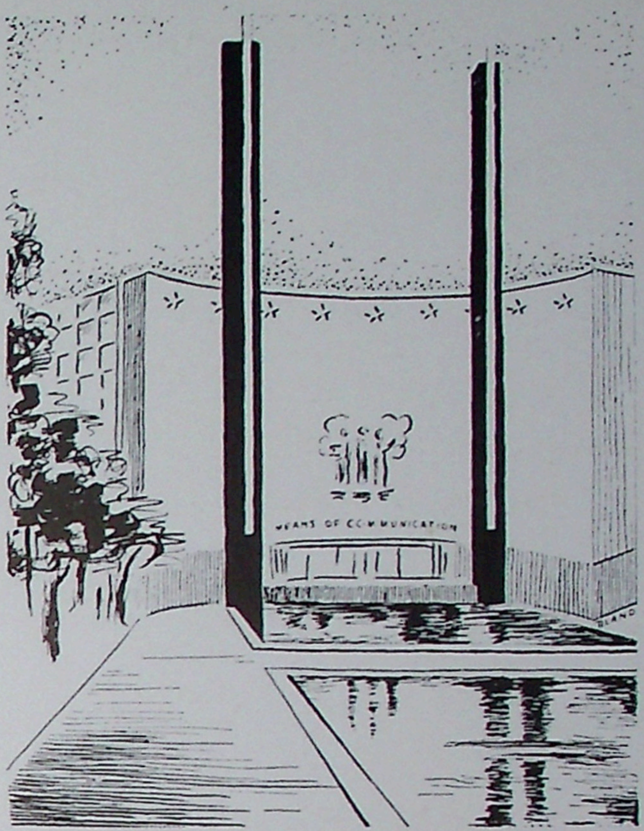
A center of interest among the crowd was the first American fully air-conditioned motorbus which was sent to Europe to spread invitations to the Fair to all the foreign nations.

At the Fair grounds, where the Motorcade finally concluded the journey, 5 Navy blimps from Lakehurst, New Jersey, and several airplanes were circling overhead. Over 200 bands filled the air with martial music as the festive crowd congregated in the murky weather, and inspected the seven completed and the many unfinished buildings.

With the arrival of the Motorcade at Flushing Meadows the World's Fair completed its first stage of growth. No longer an embryo—a dream in an architect's mind—the World's Fair was born when the first spade dug into Flushing Meadows. Now, a year before its formal opening, the World's Fair had reached the period of adolescence. The plans of the previous years were beginning to take shape, the buildings to assume their true proportions. Roads and trees were already in place. Everything was in readiness for the final year when the Fair would reach maturity upon its opening.

The Stars of the Stage and the Screen paid their tribute to the Fair in the week following the Motorcade. For the Fair will be gigantic, and it will be beautiful. Even the stars of the Silver Screen could feel that this gigantic scientific wonder possessed more appeal to the imagination of the populace than any number of them could muster.

We at Cooper Union, who study Engineering and Art should feel the tribute accorded our studies by the great commercialists of the world and should continue our studies inspired a hundredfold by the vast scope of the World's Fair — the ultimate crystallization of modern science blended with modern Art!



THE MOTORCADE, THE FIRST EVIDENCE OF THE REALITY OF THE WORLD'S FAIR, PORTRAYED THE MACHINES THAT SHALL BE THE SINEWS OF THE WORLD OF TOMORROW. COOPER UNION, GROWING WITH THE DEVELOPMENT OF SCIENCE, IS PRODUCING GRADUATES TODAY WHO SHALL BE THE SINEWS OF THE WORLD OF TOMORROW.

SCHOOL

FOUNDATION BUILDING

ONE of New York's distinguished and venerable buildings is Cooper Union's Foundation Building. Erected in 1859 it was then this city's first skyscraper with two inner sweeping stairways leading up to the seventh floor. Because of Peter Cooper's foresight, the well for the elevator was built in, so that years later the world's first elevator ran from the basement to the top floor.

Let us wander through the building. First we visit the Great Hall, or revisit, for it's here that we were first introduced to Cooper Union via an examination sheet. And it is from here that four years later we are ushered forth into the world, via Commencement. Many important political speeches are given in this place as well as a great number of lectures. The location of the hall is such that any activities held there will not interfere with the students.

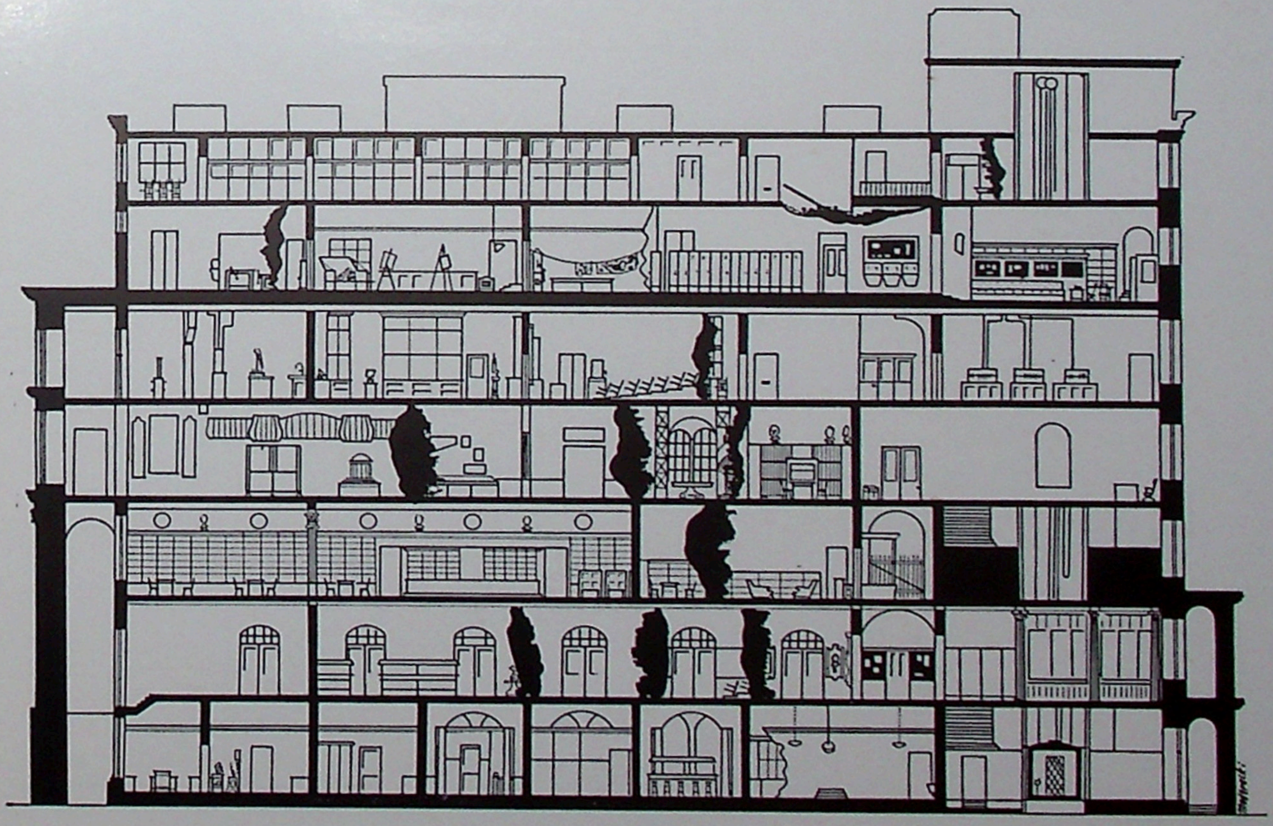
Originally the main floor of the building was devoted to shops. At present the engineering classrooms are located here, and on the second floor, as well as those of the architectural and several art classes.

On the third floor we find the free Reading Room, open to the public, one of Peter Cooper's basic plans. For it was in keeping with his philosophy that whoever wished a chance to enlighten himself, should have it. And of course, all the students are familiar with the Student Library where they have worked, and studied, and talked, and slept many hours away.

The Museum on the fourth floor is particularly dear to lovers of art, for again, an outcome of Peter Cooper's wish, it provides the art student a chance to study at first hand works which would otherwise be inaccessible. It is a bit of the old world here above the hurrying and scurrying of students. The Art Library of the Museum is excellent and has been of inestimable help to many artists and students.

We pass through more classrooms of the Engineering School on the fifth floor and arrive at the home of the Art School on the sixth floor—conveniently located for the vast studio-rooms make excellently well-lighted ateliers. In the Art School is found the fourth of the Cooper Union libraries, that of the Art School, with a selection of books dealing with every phase of art, in all languages.

An artist's conception of the Foundation Building —drawn by Albin Moderacki.



HEWITT BUILDING

THE Hewitt Memorial Building is a monument to the man whose name it bears—Abram S. Hewitt. Erected in 1912, a considerable portion of its cost was met by a fund subscribed to by the citizens of New York to commemorate the man who served them so well as their Mayor.

Entering from the Third Avenue side, a visitor encounters first—the Office of the Dean. Right next door is good old Room 105H, scene of many student engineering society meetings as well as numerous E.E. quizzes.

A step or two further down the hall is the Students' and Graduates' Room. Filled with priceless mementos of Peter Cooper and Abram S. Hewitt, this room serves several purposes. Many of our future engineers gather here for "whispered" discussion of that exam-to-be, or to put the finishing touches on that lab report. Very often, the room is the scene of a tournament sponsored by the Chess Club, and on Friday nights it plays host to our literary confreres—the Pioneer Staff.

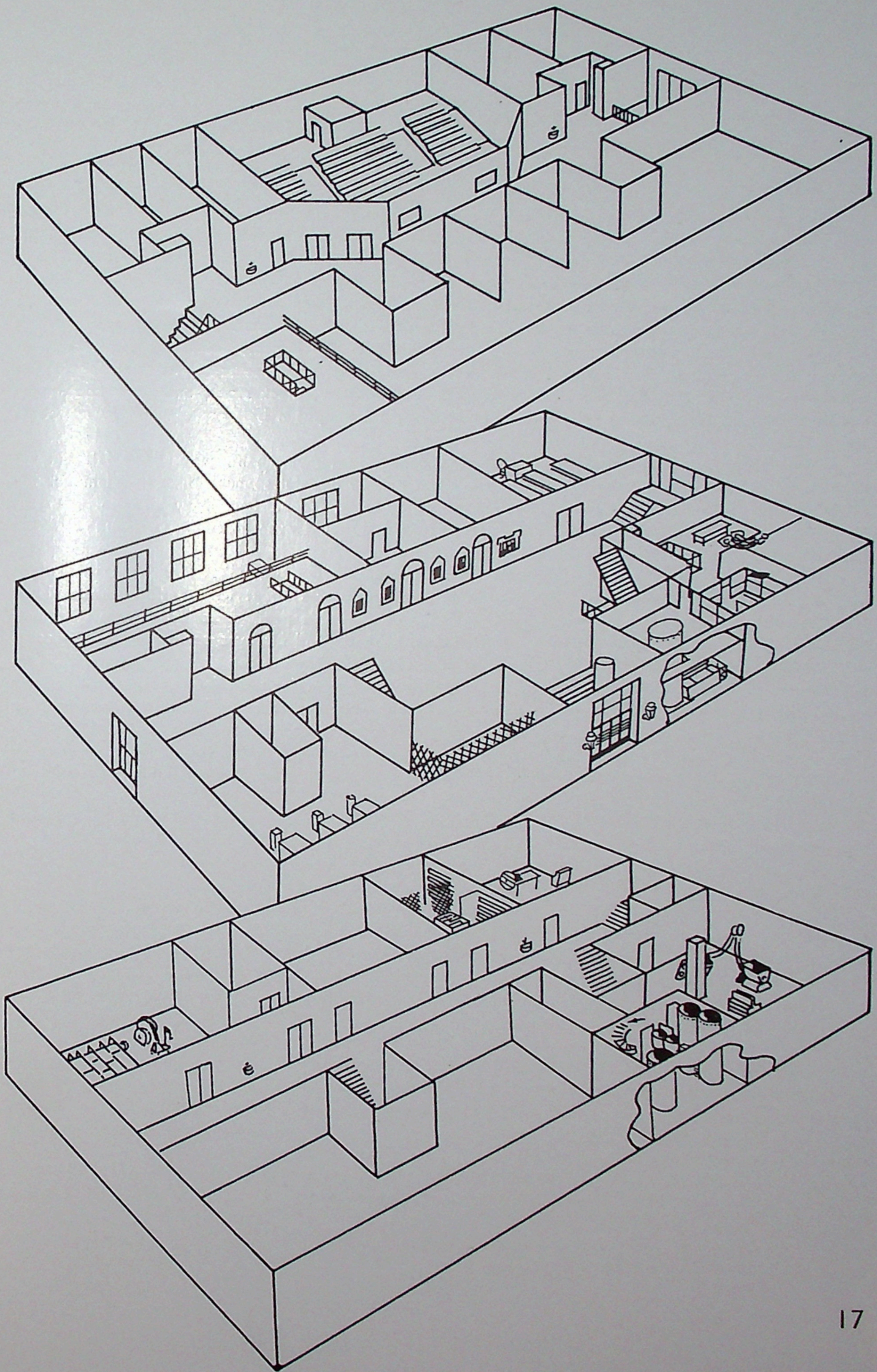
Directly across the hall is the C.E. laboratory. Here we find, at one end, machines of prodigious strength capable of snapping steel bars like so many tooth picks. At the north end of the lab we find the hydraulic equipment. Many delightful and instructive hours are spent by the tech students designing weirs, and nozzles and such and then verifying their calculations on the actual apparatus.

On this floor, we find the Electrical Machines lab and the Electrical Measurements and Communications lab, the latter being considered one of the best equipped in the East.

The second floor houses the Physics lab and the Physics Lecture Room—scene of many, many absorbing lectures by the inimitable Prof. Ball. Then, too, there are the classrooms, one of which—Room 210—is the stamping ground for the boys and girls on the General Students Council. The intricacies of Electricity and Magnetism are laid bare to the young hopefuls in the lab at the north end of the hall.

Descending to the basement, one finds the lower portion of the C.E. lab, the Surveying room, and the various M.E. labs—Steam and Gas Engines, Auxiliary Equipment and Refrigeration completing the list.

An artist's conception of the Hewitt Building —drawn by Albin Moderacki.



Peter Cooper

FROM "ABRAM S. HEWITT" BY ALLAN NEVINS

PETER COOPER was one of the rarest spirits this country has known. His mechanical talent, his business shrewdness, his zeal to better himself and others, his pragmatic conception of philanthropy, made him as distinctively an American type as Benjamin Franklin, and one as quickly taken to the American heart. But he had a shining simplicity and a high idealism that Franklin never possessed. His endowment included a genius for invention, a rich philanthropic instinct, and an unflagging interest in the common man. His adventurousness never made him ruthless; his talent for organization never made him heedless of the human unit. In youth a painstaking workman, he always remained essentially a master craftsman. He became the head of great undertakings, a multi-millionaire, a national power; yet even in later years the tall, keen-eyed, long-jawed gentleman at 17 Burling Slip, immaculate in white chin-whiskers, black stock, and frock coat, gave the impression of being ready at any moment to drive a bolt, put a belt on a pulley, or correct a blue-print.

Peter Cooper, with this exuberant, expansive, contriving temperament, was full of faith in the nation's future, and ready to embark with enthusiasm on any hopeful speculation. His plans for the establishment of a new educational institution had slowly taken shape. Sensitively aware of the gaps in his knowledge, he often declared that he hoped no one would ever have to go through his own hard struggle to get a training.

In 1852 Peter Cooper at last decided to begin erecting Cooper Union, for which he had so long made plans and accumulated funds. His golden dream was about to take form substantially. He often related how, when he first began to derive considerable profit from his grocery store and his rented houses at Fourth Avenue and Astor Place, he had fixed his eyes upon the plot opposite, in the triangle where Third and Fourth Avenues join, as a desirable site for his workingmen's institute. He bought his first lot there in 1825, and from time to time purchased adjoining strips, until he now owned the entire block. It seemed an ideal site, in the very center of a district that was rapidly being devoted to letters, art, and music. . . . Peter Cooper had envisaged a monumental structure. He wished a spacious, handsome, and enduring edifice of at least six stories, but at the same time he wanted to avoid the preposterous expense of a stone structure like the Custom House, with massive pillars, piers, and arches.

Early in 1854 Peter Cooper laid the cornerstone of his institute. It was at the very period when the panic was most mercilessly devastating the land that the undaunted Peter Cooper, aided by Edward Cooper and Hewitt, was perfecting the plans for his workingmen's institute and setting it in operation. Nothing ever better illustrated his courage and strength of purpose.

Thus was the vision of Peter Cooper, who called himself in the legal papers of the Union "a mechanic of New York" converted into substantiality. It was an inspiring achievement. This benevolent philanthropist had raised in the metropolis its first great instrumentality for higher education to young men and women on a truly democratic basis. It was the first great experiment in adult education in the country. It might be added that the Union was also one of our first important experiments in co-education.

In later years his brougham might be seen near the Seventh Street entrance of the Union. He spent long hours at the office inside, talking with the staff or transacting business. But his chief delight was mingling with the students in the corridors, visiting the third-floor reading room, or slipping into a classroom to hear the instruction. His cheerful, kindly, sagacious face, framed in long white hair, his tall, angular, slightly stooping form clad in black broadcloth, the air cushion like a small life-preserver which he or a servant carried, were familiar to everyone. His mere presence, so simple, benign, and radiant with enthusiasm for the school, was an inspiration to its staff. He never interfered with the methods of an instructor, never asked a special favor, never requested the suspension of a rule. He was the true head of the Union, and also its informing heart. His ingenuity, versatility, practical shrewdness, and idealism all touched a responsive chord in American hearts, and set a standard for future American youths.

Abram S. Hewitt

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IT sometimes happened during the bustling years of the later forties, when Polk was President . . . that on Broadway the citizens of New York saw Abram S. Hewitt and his father walking arm in arm. The city then had but a half million people, and many knew the two by sight . . . The young man, short, alert, resolute of manner, in his careful Sunday attire of blue cutaway coat, black satin waistcoat, and tight doeskin trousers, attracted attention by his hgih forehead, stern bearing, and keen glance. People knew that the keen, quiet, brusque looking young man, though out of Columbia College only a few years, was already highly esteemed by the leading business men of the city, was regarded by Peter Cooper almost as a son, and was universally pronounced to have a brilliant career before him.

He came of parents who had striven much, suffered much, and borne disaster courageously. Yet back of this family stretched a tradition of enterprise and achievement. Abram S. Hewitt inherited from his father his fine rectitude, his driving energy, and some of his altruistic impulses. Of what he inherited from his mother we can say little, for she is a more shadowy figure. Family history credited her with great common sense, industry, power of loyal endurance, and a French wit and humor. From the iron hardships of his youth Abram obviously drew an iron decision and determination. From his earliest years he knew life as a constant struggle, and was trained to intense application and hard fighting.

Hewitt, from the time he entered Columbia Grammar School onward, had played all his cards with wisdom and skill. Tireless, aggressive, high strung, nervously alert to every opportunity, he had leaped every obstacle. No other manager in the iron industry was so highly regarded, none was shrewder, none worked with such incessant energy.

So close were his relations with Edward Cooper that he was already almost a member of the family; and Peter Cooper now leaned upon him heavily for counsel. The Act to "enable Peter Cooper to found a Scientific Institution in the City of New York" was passed at Albany on February 17, 1857. In the spring of 1859 the legislature passed an amendment to the enabling law, and in it specified the six original trustees: Peter Cooper, Edward Cooper, Abram S. Hewitt . . . But as the building was completed, and as definite and detailed plans were first made for its use, Peter Cooper's advisers had persuaded him to modify and enlarge his ideas. Foremost among these advisers was Hewitt. In the work of planning the curriculum, hiring instructors, and overseeing the tuition, Hewitt necessarily played a leading part.

In this labor, Peter Cooper furnished the inspiring force, Hewitt most of the practical planning . . . he devoted nearly all his evenings to the work of the Union; he watched its curriculum, its staff, its investments, its interests great and small, with incessant care. When the Third Avenue Elevated was opened past the building in 1878, the noise was so appalling that a dozen recitation rooms had to be transferred to the Fourth Avenue side. This cost $540, and Hewitt coolly sent the bill to his friend Cyrus W. Field, president of the Elevated . . . and Field paid the bill.

Hewitt delighted in swift-paced, sparkling, allusive conversation, and was usually the genial autocrat of the table. He was a master of repartee and badinage; he had a huge fund of illuminating facts, and, drawing upon a rich stock of experience, he was an admirable story-teller. Those who had seen him only outside his house, where he often seemed reticent or even shy, were surprised at his animation. But as we should expect, Hewitt's principal service to the community after his mayoralty lay in the fostering oversight which he gave to Cooper Union. Because of the very brilliancy of its success, Cooper Union always seemed poverty stricken and overburdened. Meanwhile he tried various expedients for placing the Union on a broader foundation, with ampler resources. The new gifts to Cooper Union at last made it possible to stop renting shops and offices, and use every part of the building. They enabled the trustees to enlarge the course of night study, to open day classes for men in technology and science, and to reequip the chemical and physical laboratories. The admission requirements were raised. Cooper Union had combined a practical training in science and mechanics with an inspiring instruction in art.

CABLE SPONSORS

Gano Dunn—President of the J. G. White Engineering Corporation, he was awarded the Edison Medal last year "for distinguished contributions in extending the science and art of electrical engineering, in the development of great engineering works, and for inspiring leadership in the profession." Mr. Dunn became president of the Cooper Union in 1935.

J. Pierpont Morgan—He received his A.B. at Harvard. His interest in art and education is shown by the fact that he is a trustee of the Metropolitan Museum of Art, the New York Public Library, the Pierpont Morgan Library, the American Museum of Natural History. In spite of his diversified interests, he still finds time to golf and go yachting.

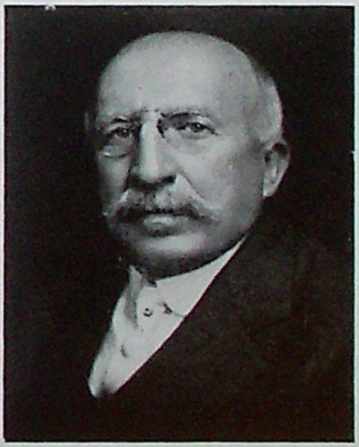
Elihu Root, Jr.—Besides being a trustee of the Cooper Union, Mr. Root is a trustee of the Metropolitan Museum of Art and of Hamilton College, his Alma Mater. He puts in most of his time practicing law and working on the boards of a number of prominent institutions. Mr. Root's chief hobbies are small boats and books with a leaning toward history.

Percy R. Pyne, Jr.—He received his A.B. and M.A. from New College, Oxford, England. His activity is attested by a partial list of the institutions he is connected with; he is a member of the American Academy of Science, New York Zoological Society, the Princeton Engineering Association, the Pan-American Society, as well as treasurer of the Cooper Union.

CABLE SPONSORS

Walter S. Gifford—Harvard claims him as an alumnus and his older son is now attending the same university. Outside of his American Telephone and Telegraph activities, Mr. Gifford's interests center on his home and gardens. Weekends are spent in his small Colonial farmhouse near Armonk where he enjoys reading and gardening.

Barklie Henry—Mr. Henry is the freshman of the Cooper Union Board of Trustees, having been appointed in 1935 at the age of 32. He is also a trustee of St. George's School, Newport, R. I. and the Green Vale School, Roslyn, L. I. Mr. Henry is an enthusiastic skier and in the summer, he enjoys tennis and yachting.



Henry D. Williams—Mr. Williams is one of Cooper Union's most distinguished alumni. He received his B.S. in 1885 and in 1924 after training for the law at Columbia University, he rose to become one of the world's foremost patent-law attorneys. He has maintained an active interest in the Cooper Union serving as president of the Alumni Association for the past two years.

Robert W. Kaltenbach—Another of Cooper Union's more famous alumni, Mr. Kaltenbach has distinguished himself in the fields of civil and mechanical engineering. After holding several positions of engineering prominence, he became president of the R. W. Kaltenbach Corporation, engineering consultants.

TRUSTEES

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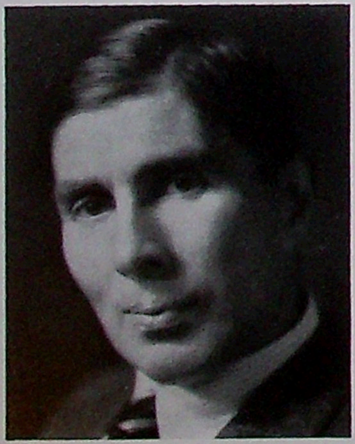


PERCY R. PYNE, Jr.

BARKLIE HENRY

# of COOPER UNION 1938

LONG before its founding, the Cooper Union existed in the mind of Peter Cooper. "This building has scarcely been absent from my thoughts, for a single day, for nearly thirty years. I have labored for it, by night and by day, with an intensity of desire that can never be explained." This is from an address before the School of Science and Arts on July 1, 1859.

During those thirty years many concrete plans for the conduct and growth of the school were formulated by Peter Cooper. It was to insure that the school's affairs would be managed in a manner which he deemed proper and which would lead to the attainment and maintenance of those high ideals and standards which he visioned, that a Deed of Trust was drawn up. In part, this document provided for a Board of Trustees, who were vested with full administrative authority, and contained certain provisions for their guidance in the performance of their duties. Some of these provisions were:

The buildings and income of the school were forever to be devoted to the instruction and improvement of the inhabitants of the United States in practical science and art. The teaching of social and political science was to stand preeminent among all the activities of the institution. The Trustees were to provide, insofar as possible, for free courses of instruction at night in the application of science to the useful occupations of life, on social and political science, and on such other branches of knowledge as would benefit the working classes. A free reading room, galleries of art, and of scientific collections were to be maintained, as well as a school for the instruction of "respectable females" in the arts of design. As soon as it was financially possible, a thorough polytechnic school, equal to the best, was to be established.

Peter Cooper's business acumen prompted him to incorporate a provision that neither the school nor any part thereof should ever be mortgaged, and that the debt of the institution might never exceed five thousand dollars.

No person, be he professor or student, shall be discriminated against in any way by reason of his race, creed, or color.

The eighty years since the founding of Cooper Union have seen the fulfillment of these ideals. The Cooper Union, as it stands today, is everything its founder wanted it to be—and more. Scientific and industrial progress has necessitated the expansion of the courses to equip the students for an increasingly complex world. These periodic readjustments were brought about in large part by the efforts of the Board of Trustees.

Two recent acts of the Board of particular merit are the completion of the Six Year course in the Night School of Engineering, leading to a recognized degree, and the appointment of a resident director to unify the control over the various activities of the institution.

Cooper Square Park

COOPER Square Park was rededicated on the afternoon of June ninth under the auspices of the Department of Parks, amid band music and flying pennants. The freshly painted fence, the seventeen newly-planted oak trees, the shrubbery, have at last turned this familiar triangular plot into an open park, and although rather small, a campus, after a fashion, for Cooper Union.

Park Commissioner Robert Moses presided at the dedication. This historic landmark was first presented to the city by the Stuyvesant family one hundred ten years ago. When Peter Cooper erected his institute in 1859, just north of the park, it was renamed Cooper Square in his honor.

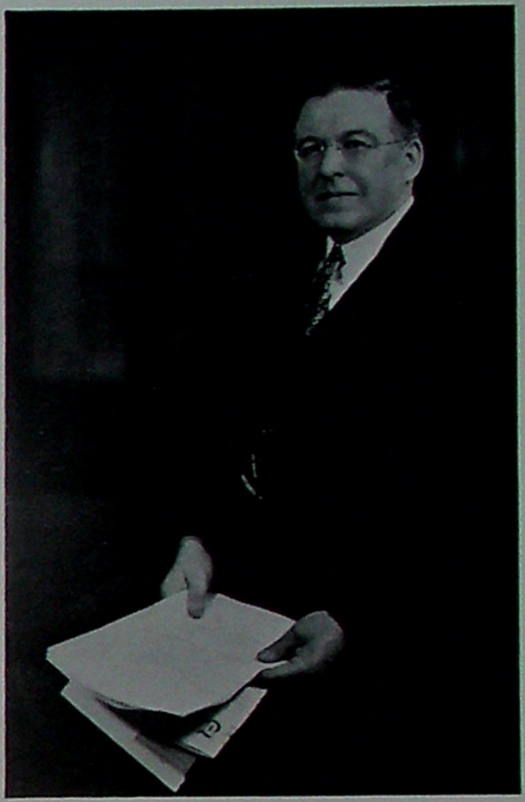
Facing southward across the park, the bronze statue of the founder of the institution was modelled by Augustus Saint Gaudens. A former student of Cooper Union, he had wanted to repay the debt he owed Peter Cooper for the fundamentals of his art education. Stanford White designed the architectural setting for the statue. This familiar monument, which is annually honored in memory of Peter Cooper on Founder's Day, was newly polished and gleaming in new glory for the rededication program.

The ceremony was held in the afternoon in conjunction with the seventy-ninth commencement exercises held in the Great Hall in the evening. Gano Dunn, president of the Cooper Union, delivered the address on behalf of the institution. He spoke of Peter Cooper's high ideals and accomplishments in free education. He pointed out that Cooper Union has always lived up to his ideals. He stressed the free lectures on social and political problems that have been sponsored in the Great Hall since its founding.

J. Charles Riedel, deputy chief engineer of the Board of Estimate and Apportionment, an alumnus of Cooper Union, also spoke as well as Stanley H. Howe, executive secretary to Mayor F. H. La Guardia.

Music was supplied by the Park Department Band. A guard of honor made up of members of the department stood before the statue of Peter Cooper throughout the ceremony.

THE DEAN



TERMINATING four scholastically excellent years of undergraduate study, George F. Bateman — graduating as Salutatorian—received his baccalaureate degree from the Cooper Union Day School of Engineering in 1907.

Those in charge of The Cooper Union were much impressed with the potentialities of this young graduate, and asked him to remain as an instructor. We wonder did he ever dream that 31 years later he would be Dean of the Engineering Schools.

Proceeding on the theory that each new class possessed an individual personality, the delivery of Mr. Bateman's lectures was revised each term to fit the temperament and aptitude of his students. Success of this philosophy won for Mr. Bateman the title of Professor.

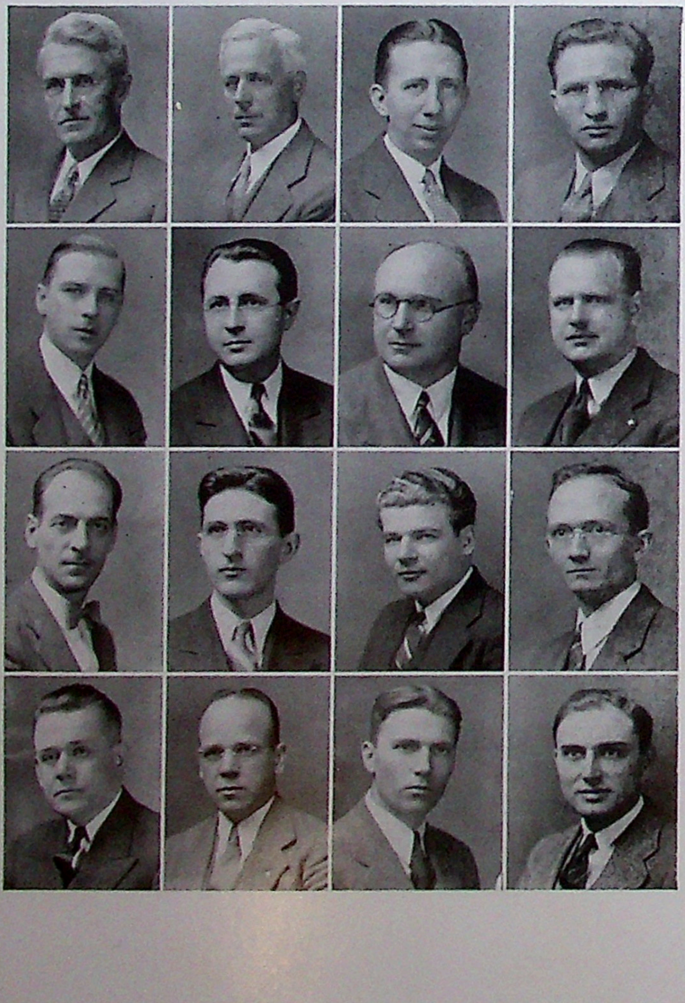
When the vacancy occurred, Professor Bateman was given full charge of the Department of Mechanical Engineering. The present smooth efficiency and development of this department—particularly in its laboratories—is due in large part to the systems he installed as its head.

While the present twenty-four night school graduates were still struggling with Chemistry and Physics, the reorganization of the night school was entrusted to Professor Bateman. As Dean, he directed the organization of and obtained official recognition for the present excellent six year night course in engineering. During his smooth running administration of six years many students have had the pleasure of making personal contact with the Chief of the Engineering Schools through his Advisory Service.

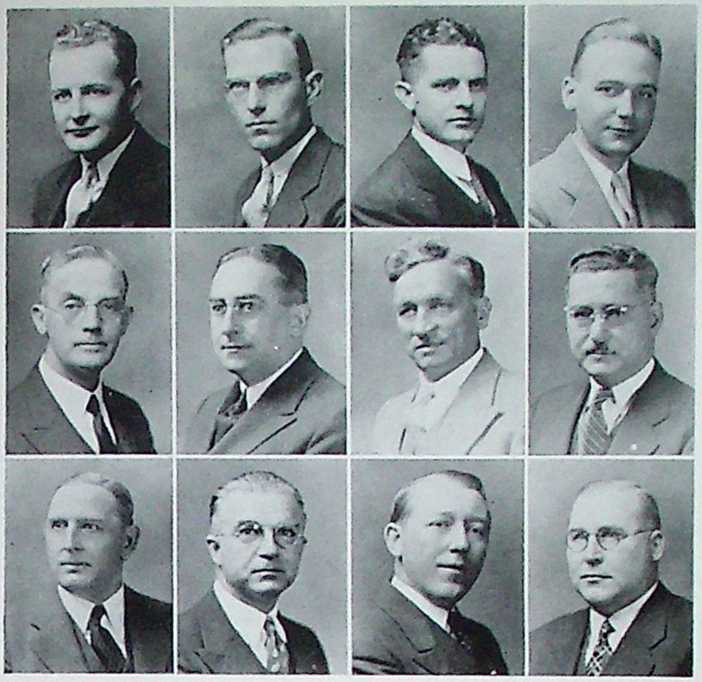
Because he has always worked with the best interests of Cooper Union at heart, and because he has given so much of his time in an advisory capacity to them, he has won the respect and confidence of the entire student body.

F. E. FOSS
A. BALL
H. W. REDDICK
A. B. NEWMAN
N. L. TOWLE
H. C. ENDERS
R. C. BRUMFIELD
K. HAUPTMAN
W. J. PICKETT
H. W. MERRITT
J. COULL
F. H. MILLER

ENGINEERING



J. P. J. WILLIAMS
W. E. BOSSERT
H. B. HOPE
A. J. B. FAIRBURN
H. F. ROEMMELE
W. G. FINDLEY
C. H. YOUNG
F. H. TALLMAN
C. H. LEHMANN
L. PEREZ
E. A. SALMA
H. HALSEY
E. MANTZ
A. L. TARR
E. W. STARR
W. A. VOPAT



R. F. KUNZ
C. S. SHERMAN
P. NUDD
S. L. SCHAUSS
J. W. LANGGUTH
S. B. SHERIDAN
W. H. SPAHN
J. J. TANZOLA
E. J. LARKIN
O. G. PULLER
O. G. GERDIN
W. O. ENTENMANN

FACULTY

H. STEMPER
H. OTTEN, Jr.
R. A. FARALLA
M. H. VAN BUREN
R. SZYMANOWITZ
F. J. McMACKIN
W. T. PETERSEN
C. W. MILLER
A. P. CRAIG
A. H. BEILER
F. C. RIEDEL
R. SALMONSEN
J. J. CURREY
K. E. LOFGREN
W. G. VALENTINE
L. L. B. SUMMERS

The Education of an Engineer

FOR the past few years, engineering periodicals have been a stamping ground for the expression of sundry opinions on what is wrong and what is right with the education of embryo engineers. As many points of view are expressed as there are writers to express them, but there are certain trends of thought which can reasonably be expected to find concrete application in the near future. To those who compare engineering education to the weather, in that "everyone talks about it, but nobody does anything about it," we can say that the only worth-while changes are those which are made slowly. We must avoid the faddisms which have afflicted educators in other fields.

An attempt will here be made to sketch a few of the present-day ideas on engineering education in the light of suggested modifications and improvements. To judge them would be presumptuous, that is, a task involving considerably more study than this article represents. Our object shall merely be to inform and stimulate interest in the reader.

To begin, let us keep in mind that the engineering college is a relatively new institution. Before the industrial era, the curriculum of the universities consisted entirely of that class of subjects grouped under the term "humanities." With the growth of science and the increasing demand for men trained in the application of scientific principles, college students were permitted to make special studies to equip themselves with the necessary knowledge to cope with some of these problems confronting industry. The kind of knowledge required came to be restricted to narrower and narrower fields, until the time arrived when intense specialization was prevalent in engineering colleges.

This specialization was decried by those who believed that the undergraduates were thereby being given one-track minds. The necessity for a broad engineering training in fundamentals was stressed, leaving special studies to post-graduate work. The object was to keep specialization to a minimum. In many schools, including Cooper Union Institute of Technology, this attitude has been adopted. We find that the course of study in the first year—and to a lesser extent in the second year—is practically identical for all the four branches of engineering. In the last two years, departmental work becomes supreme, as the students concentrate on the technology of their field. However, even in this phase of the work, no particular topic is given such emphasis as to overshadow the objective of comprehensiveness. Moreover, laboratory work and study is continued outside the particular departmental supervision. For example, electrical engineers-to-be are found in the Civil and Mechanical engineering laboratories; and, on the other hand, the Electrical Engineering department tutors the Civil, Mechanical, and Chemical engineering students. The result of this is, so to speak, that the students learn a little of the jargon of all the branches of engineering in addition to the poetry of their chosen field. The importance of this cannot be overestimated, for it is the exceptional case where an engineer must deal only with problems directly related to his particular technology. To confine the instruction of engineering students to a narrow scope would seriously handicap their professional development. Engineers must be prepared to meet many situations. While it is true that information can be acquired when the need for it arises, nevertheless some basic ideas must be comprehended before the outlines of a problem can be formulated and the necessary knowledge sought.

There is another and a broader aspect of this subject of specialization which has been debated since the beginning of engineering education. It is the question of how much attention is to be given to cultural subjects in the engineering curriculum. Although discussion of this problem has waxed and waned for the past sixty years, it is particularly intense at the present time. Numerous articles have

Random shots illustrating the various techniques employed by those in whose hands the destinies of Cooper students rest.

Prof. Ball always manages to put on a good show.

appeared in the publications of the engineering societies urging that the engineering student be given some instruction in history and literature. It is significant that both the Engineers' Council for Professional Development and the Society for the Promotion of Engineering Education have recognized the inferior position of the humanities in the formal curricula of engineering colleges. At Cooper Union Institute of Technology, for example, non-engineering subjects consume about ten per cent of the total time spent in school. These are largely concentrated in the lower two years, being practically non-existent in the Junior and Senior years. Other colleges are little different in this respect, the national average being about thirteen per cent. These figures are no secret. Every engineering college faculty recognizes the situation and probably wishes to do something about it. The indisputable fact is, however, that if the engineering student is to be thoroughly trained in the fundamentals of science and technology in the short space of four years, there is neither time nor energy for the pursuit of culture.

Several solutions have been offered to supply this deficiency. The first and most obvious one is to extend the course of study to five or six years. This is to follow the procedure of education in the medical and legal professions, where instruction in the special field is preceded by three or four years of purely academic work. Such a plan might be adopted for engineers, but is open to the common objection that the time of gainful employment is too long postponed. The average age of graduates would be about twenty-four years. This would tend to place the selection of students on a basis of the ability to pay for this long training period, rather than on considerations of natural aptitude and desire for learning.

If the plan of extending the curriculum is discarded as impractical, the only way in which more time can be given to cultural subjects is to eliminate some of the technical work. This is a method on which everyone concerned agrees in principle, but which is usually nullified in practice. Technology makes such demands on the students' time that everything else must be subordinated if passing grades are to be obtained. Thus the percentage of school time allotted to non-engineering subjects becomes even more insignificant when considered on a basis of outside preparation and study. Technology and "culture" are like oil and water; when mixed, the one submerges the other.

This concentration on technology might be reduced if industry as a whole could be persuaded to invest time and money in completing the student's education. A plan of part-time study and employment would permit the student to be almost self-supporting, at the same time fitting himself for professional work. Some of the larger industrial units have already adopted this procedure for college graduates. Smaller employers, however, are seldom in a position to subsidize the education of their employees. They tend to demand specialized knowledge which can be immediately used to advantage.

A great deal can be done by the colleges to assist informally the cultural development of their graduates. It is true that at the beginning of his career what the engineer needs most is a thorough knowledge of his technology. Later on, the need for technical learning often grows less especially in those cases where the engineer is in a managerial position. In this situation, a liberal education is of greatest value. It can be acquired during the early years by a planned reading program under the guidance of the alma mater. The engineer will then have the broadest background of ideas to help him perform his executive duties.

The role of the engineer in society has never been clearly defined and probably never will be, since no two engineers are exactly alike. Some people seem to think that the engineer can be the saviour of mankind—that the cure for all the ills of our social, political, and economic institutions will be found in an application of engineering methods. It is true that the use of the engineer's methods would in many fields be a refreshing change from our present tactics. But it should be kept in mind that there is a vast difference between handling materials and handling men. Significantly, the idea of an engineered economy culminated in the absurdity of Technocracy.

No, engineers are not expected to be political leaders. But there is a crying need today for a body of enlightened people which would leaven public opinion and judge the plans of politicians in the light of past history rather than the expediency of the moment. Our liberal arts colleges will supply the economists and government experts. At the same time, should one-third of our college students confine themselves entirely to a study of technology, neglecting the vast body of thought and knowledge outside its bounds?

There is not going to be any over-night solution. For the present, some engineering students will do their best to broaden their outlook by independent reading and study. Eventually, perhaps by a longer course in which the colleges, industry, and government cooperate, the education of an engineer will attain the scope which it rightly deserves.

Dignified, but friendly.

ART DIRECTOR

AUSTIN PURVES, JR., has been director of the Art Schools since 1931, but the spring semester of 1938 is the last he plans to spend at Cooper Union in an executive position, as he has resigned.

It was the purpose of Austin Purves to reorganize the Art Schools, to set them in accord with our times, to impart to them a new vision. When Mr. Purves arrived, the Art Schools were elderly conservative bodies; as he leaves, they are vital, elastic, alert. Formerly the courses were unplanned; now there are specialized curricula, and the preparatory courses the first two years, serve both to orientate the pupil, and to initiate him into the fundamentals of art. When the neophyte reaches the semesters of specialization he should possess insight into other crafts of art. Mr. Purves' plan of dividing art into basic categories of the graphic, decorative, plastic and architectonic, according to the best criticism, giving every student a schematic fundamental training in these branches, is an uncommon practice. He has sponsored a study of the historic painting techniques, and a research laboratory for the study of materials in the light of plastic design; he has changed the painting classes for the advanced students from the old concept of "life classes"; the young architects study the work of the great moderns, that classic law of great buildings: "Form follows function."

All of this work could not have been accomplished without the help of his colleagues. Mr. Purves is gifted with ability to select creative thinkers, having formed a fine, integrated teaching group.

Mr. Purves has a rare sense of tolerance and kindliness. His keen sympathy and personal interest in each student have helped to make a fine director. His sturdy thinking and subtle approach have set him apart as a provocative mentor. By those who have worked under his guidance, his endearing character will not be forgotten.

ART FACULTY

COOPER Union has been credited with operating the most forward looking art school in the nation. This is due, in part, to a fine teaching staff headed by Mr. Purves who teaches the three phases of pictorial illustration: book, cinema, and mural.

Mr. Esmond Shaw, Assistant Art Director, is the head of the Architectural Department. He has the happy faculty of keeping his classes on their toes with interesting assignments not only in architecture, but also lettering and book-making. Art students in extra-curricular activities have often sought his advice and help.

Mr. Feeley, who heads the Plastics Department, stresses the necessity for tactile experience, through the use of textures of materials, surface planes, and three-dimensional structures built by the students. This ultra-modern course helps the pupil's creative ability.

Mrs. Harrison, head of the Design Department, has performed the miracle of instructing students in the higher realms of two-dimensional symbolism. Hers is the task, lightened by Miss Shutz, of teaching all students the art of making a dynamic shape move in space, stopping a movement by a spot, or creating subtle colors in harmonious light. These fundamental principles influence all of our art work.

Mr. Harrison, likewise an Officer of Administration and Instruction, is the driving force behind his conception of painting, emphasizing the movement of volumes in space. Oft he summons the Muses of Poetry and Music for inspiration.

Cooper Union does not restrict itself to one approach to painting. Mr. Eldredge differs from Mr. Harrison, but his classes are equally enthusiastic. Mr. Turnbull is a good authority on tempora painting having written a well-known book on the subject. Mr. Stenbury and Mr. Thomas have taken the preparatory student in hand. Miss Heller introduces them not to painting, but to lettering with a taste of commercial design.

Mr. Rudy passes on his knowledge of sculpture quietly and almost shyly. Clay, wood, marble, and other plastic mediums are used to accustom the aspiring student to the possibilities of different mediums. Both free-standing and architectural sculpture are studied. Miss Ulrich acquaints the beginners with plastic art.

Advertising Design is ably administered by Mr. Westervelt. His photographic ability and commercial knowledge have made him popular.

Fashion attracts many Day Art Cooperites each year. Miss Hutton guides those girls (and boys) who are interested in designing and illustration of clothes and in costume history. The draping class, under Mrs Bonner, offers the opportunity of making the design an actuality.

ART SCHOOL FACULTY

MANY people have wondered just what we study, just what we do in the Art School. Here is a general idea of our work.

The Cooper Union Art Schools enable a student to discover for himself the field in art for which he is most suited. Further, it opens to him new approaches and different aspects of art in general.

The purpose of the first two years of this four year course is primarily to prepare a background for future specialization. This preparatory course consists of the study of Architecture, Painting, Decorative Design, and Plastics.

Architecture teaches the appreciation and study of old and modern forms, as well as the handling of materials and techniques to design. This includes construction with all the details. Building model houses and rooms has proved very popular.

Painting, a study of movements in space and the relation of objects on the flat surface of canvas, not only consists of painting and drawing the human figure and still forms, but sketching familiar scenes, usually out of doors, is included. The experience of preparing a canvas and making paints from raw color is an added feature. Pils, gouache, and egg tempera give the student a variety of painting materials.

The decorative design course collaborates designing textiles with actually dyeing and preparing materials for dyeing and block printing. Weaving, rug hooking, and needlepointing are crafts which add to the enjoyment of the work. The student's creative ability is awakened by experiments with symbols inspired by nature, our city, or objects which interest him.

The chief objective of Plastics, a comparatively new course, is three-dimensional industrial design. Plaster, glass, wire, rags, any every day material may be used to bring out its greatest utility and aesthetic value.

One day a group of visitors making a tour of inspection of the school asked the Plastic students the value of a certain composition of colored papers glued on cardboard. They inquired if such compositions were meant to be hung in the home since they appeared devoid of human interest. Constructions of this sort give the artist the experience of arranging areas, in this case colored papers, into an interesting and exciting composition. These same principles are applied to painting, architecture, and sculpture. A well-equipped dark room is available for those interested in photography.

Lettering is given once a week to increase the pupil's appreciation of design of letters and to broaden his cultural horizon with pieces of literature.

Specialization comes in the third and fourth years. The four major divisions of art are explored in more detail since proficiency in vocational or professional subjects is achieved through an understanding of the basic approaches of art: viz., architecture, plastic and graphic. The courses of specialized work may be listed as Illustration, Advertising, Design, and Fashion.

During the school year, outside research is often required. The museums, galleries, and libraries offer ample material. Students have every opportunity to study at first hand the originals of old modern masters. In addition, Cooper Union has a museum of its own which specializes for the most part in the eighteenth century arts of decoration with a fine collection of paintings, drawings, prints, instruments, and so forth. The Art Libraries on the second, fourth, and sixth floors are invaluable. Every possible art subject is covered in the rare collection, many volumes of which are priceless.

The climax to the year's activities is the final exhibition. Here one can see the results of months of hard serious work. Truly both instructors and students can be proud of the Cooper Union, for this exhibition is the appreciation of art which has been instilled in the student body by an enthusiastic teaching staff.

Students in the Art School do more than ride up and down in the elevator, or more than just dashing in before 9:30 and wandering about with sketch pad and pencil and a vague, searching look. They work hard, for there is much to be accomplished from the first day of school until the graduating day. And, after graduation, they are so inspired, they continue onward.

ESMOND SHAW
Assistant Art Director

MR. E. S. ELDRIDGE
MR. P. FEELEY
MISS C. B. HELLER
MRS. E. BONNER
MR. W. HARRISON
MRS. C. HARRISON
MISS R. HUTTON
MR. W. T. PRIESTLY, Jr.
MR. C. H. RUDY
MR. A. STENBERG
MISS A. SCHUTZ
MR. D. TURNBULL
MR. W. M. WESTERVELT
MISS L. ULRICH
MISS A. W. FRANKE
MR. B. THOMAS
MR. C. D. BADGELY
MR. R. B. DOWDEN
MR. S. ENTWISTLE
MR. C. M. FLYNN
MR. H. M. HEATLY
MR. R. G. BELCHER
MR. J. M. NEWELL
MR. B. RABENOLD
MR. G. SALTER
MR. H. SCHAEFER
MR. J. P. TURNER

Building The

WE are living in an age of great technical development. Our country is one of the most highly industrialized in the world; our city is one of the focal points of industry. It is, therefore, particularly significant that the theme of the coming world's fair in New York City is "Building the World of Tomorrow."

Today, life moves more swiftly than it has in the past. Great things are being accomplished almost every second, yet, in the constant stream of happenings, they pass by unnoticed. Events that today are commonplace would have been marvelled at ten years ago. But that is the story of man. Each successive era shows proportionally greater accomplishments than its predecessor. We seem to be moving slowly towards some sort of a goal or utopia.

However, civilization does not always move so smoothly. Time and time again progress has been retarded and is being retarded, the main source of interference being war or preparations for war. Its effects can be clearly seen; the last war left its mark in the weakening of our economic system and the establishment of various totalitarian forms of government. It often appears that we are going backwards, accomplishments and sacrifices seem to have been made in vain. But perhaps the answer might be, whether we seem to be going ahead or not, that the main achievement of life is in giving itself up for the sake of future generations.

We live for the future, our whole existence is wrapped up in this fact. When we no longer realize it we have become old for our main reason for living has gone. That is what characterizes youth—not age, but purpose.

World of Tomorrow

We are at present students. Whether our aim lies in the field of art or of engineering, we are preparing ourselves for a place in society. Whether society finds a place for us or not is another matter, we are training ourselves for the future. We are desirous of doing our share in the "Building of the World of Tomorrow," each of us contributing in his own way. Therefore, to us the World's Fair should be something alive because we are to inherit the "World of Tomorrow" and to help build it up.

Our present civilization is a very complex one. It is particularly characterized by the fact that the people of the world are being brought closer and closer together, not alone in purpose, that is eking out an existence on an earth that is rapidly being exhausted of many of its natural resources, but by various improvements in transportation and communication. No nation, no matter how large, is self sufficient. And this condition of interdependence among peoples is further aggravated by the development of extreme nationalism which is just an aggressive selfishness under a cloak of patriotism and flag-waving. But the fact remains, that the aims, the necessities, the purposes, of all peoples are closely knit together. The Fair will attempt to show this. The exhibits will vividly portray the interlocking of the forces which make up this world, and indicate that if properly brought under control would lead to a better existence. It will point out the barriers which isolate nations and groups and stand in the way of progress. It will show the necessity of doing things for the common good, what man can really accomplish if he lives truly as a social being.

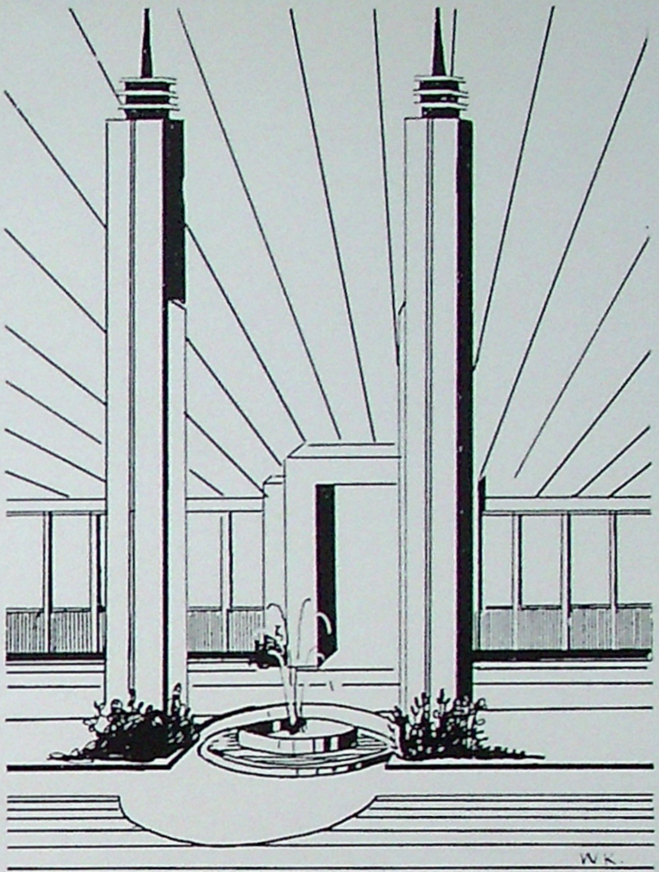
It will be necessary to display the constructive forces which make up this world. The tools with which the "World of Tomorrow" is to be built must be chosen. To accomplish this there will be commercial exhibits, exhibits of government and social agencies. The nations of the world will display the best that they have to offer in materials and ideas. All this will lead up to one main idea, the theme of the Fair. It will bring out in perspective the accomplishments of the past, and the tools of the present, thereby pointing out the road to the future. It will then clearly show what we all have to offer and what we can expect if we all cooperate in the exploitation of our talents by working together.

The artist, the engineer and the architect will be the wielders of these tools of the future. At Cooper Union, men in these various fields learn to work together. Especially in the extra-curricular activities do we find such harmonious collaboration.

The opening of the Fair is being timed with the anniversary of an event that had a very important bearing on the history of the United States, and which gives added significance to the Fair. It is the one hundred and fiftieth anniversary of the inauguration of George Washington as first president of the United States in New York City on April 30, 1789. It was the last necessary step in the establishment of the new government, a history-making government which was to have a decided influence on the world.

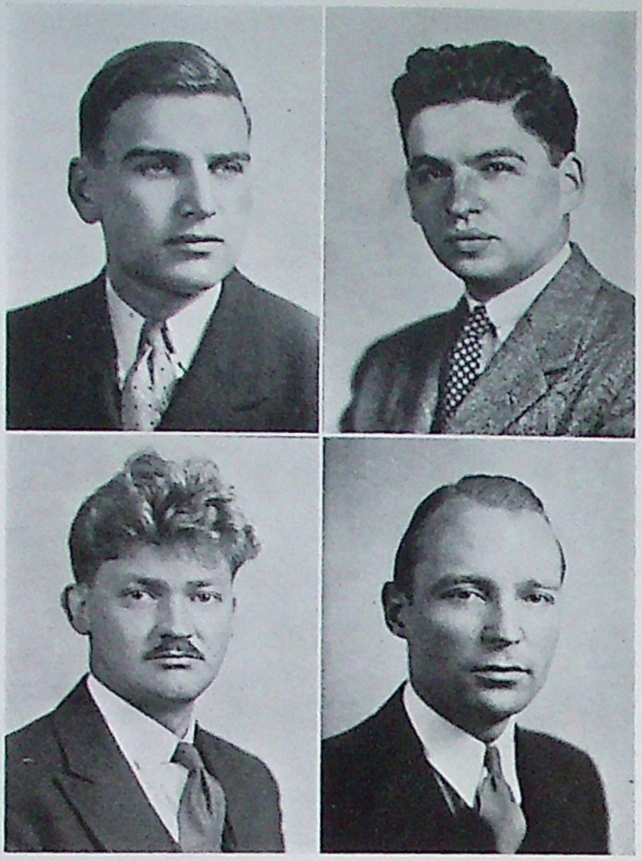
The old Constitutional Congress met frequently in New York City. After the Constitution had been adopted, the new Congress met there for the first time on March 4, 1789. The inauguration of Washington completed the organization of the Constitution. One hundred and fifty years later there is to be a Fair in New York City which is to be dedicated to an ideal as high as that to which this new government had been dedicated. "Life, liberty, and the pursuit of happiness" was the theme of the new government. "Building the World of Tomorrow" is the new theme which takes on a peculiar significance in view of the destructive forces in the world today which threaten the existence of those ideals on which our government is based, because it is not only the material advantages, the accomplishments of art and science, which are essential to the well-being of the world, but the necessity of holding on to the right to "life, liberty, and the pursuit of happiness."

Thus, the Fair will point out the interdependence of man, the relation of one country to another, and the hopes for the future which can be attained by the fostering of cooperation and coordination among the peoples of the earth. It will also bring to mind, due to the commemoration of the inauguration of George Washington, the certain basic ideals of good government so essential in the "Building of the World of Tomorrow."

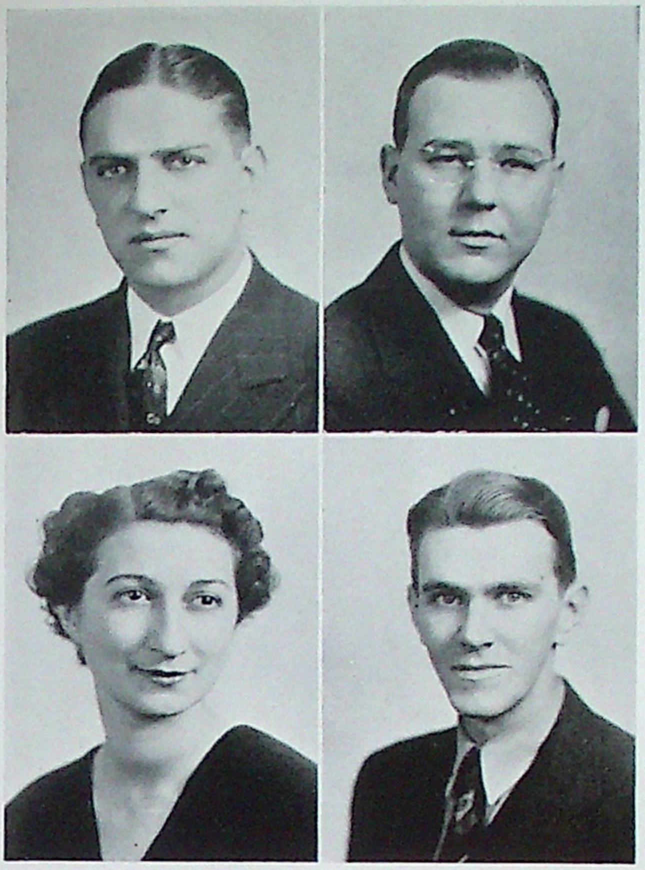


THE GROUP OF ARTISTS, ENGINEERS, AND ARCHITECTS GRADUATING TODAY SHALL WIELD THE TOOLS THAT WILL BE USED IN THE CONSTRUCTION OF THE WORLD OF TOMORROW. THEIR GRADUATION FROM COOPER UNION IS MERELY THE TIME FOR THE COMMENCEMENT OF THEIR IMPORTANT CONSTRUCTIVE WORK.

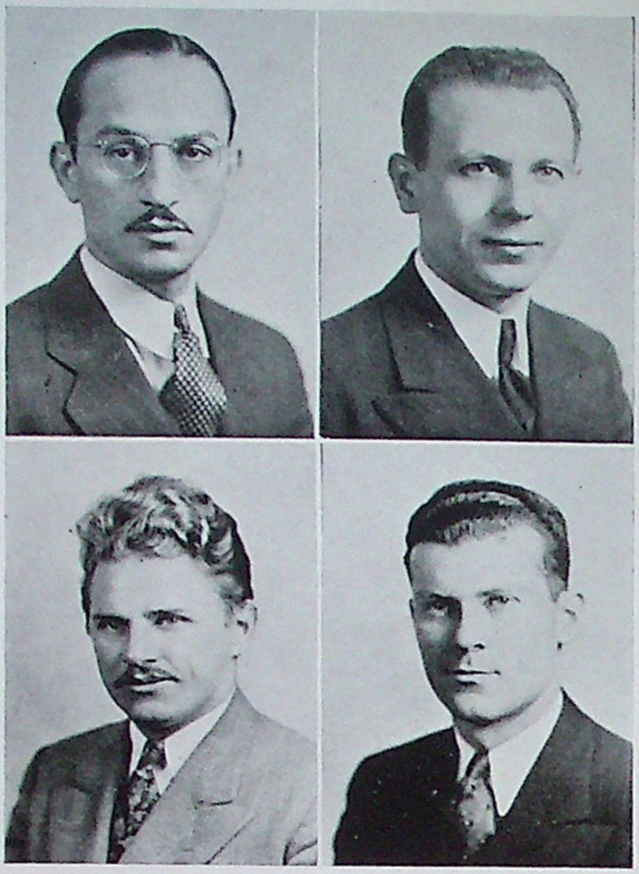
SENIORS



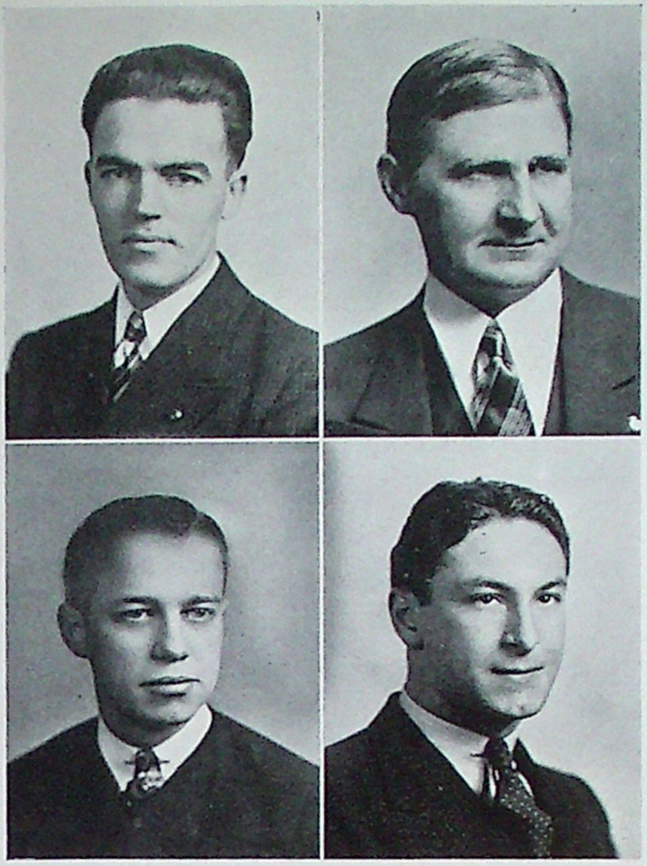
Walter Broad has shattered many a Cooper tradition during his six years—longer ago than we like to remember, the Dean was much incensed over a "malicious individual who endangered other students by consistently turning off the lights in the halls." It was only recently that he 'fessed up to this one. Then again, we all remember the oft-reiterated warning that each student must have a slide rule. Walter is still showing them how to do it with the aid of three pencils and plenty of paper, but minus the slide rule. » » **Morris Dolgow** gets the orchids this trip around. We admire him for giving up a good Government job down in Washington to come back to school (but don't tell him who wrote this). He's got a pair of pants that look like the kind the comedians wear in burlesque slapstick (don't protest, boys, you've been to 'em). By the way, he's marital-minded, but to date we haven't learned who the rag and the bone and the hank of hair is. » » **William Edman** completes the lucky thirteen of our happy little family. If he stays in Doc Coull's classes much longer, he'll be a tradition around these yere halls. He used to work as a big, bad chemist for Squibb, but decided he'd see more of life, so now he works down by the waterfront where he casually steps into the water every once in awhile to provide the boys with a laugh. If he offers to drive you home some wintry night don't let him, 'cause he's got a super-draft touring car, the antics of which will amaze you. » » **Henry Franz** is the strong, self-sufficient man from the wilds of the Finnish steppes. After they strapped him and put shoes on him, he entered Cooper as a matter of course (who threw that shillalah?). When he had his graduation pictures taken, the photographer must have focussed on E.E. student by mistake, because he in no way resembles the prevalent classic features of the chems. He gets the horrors once in awhile, thinking of what the folks back in Helsingfors would think if they saw the product of the camera's seeing eye.



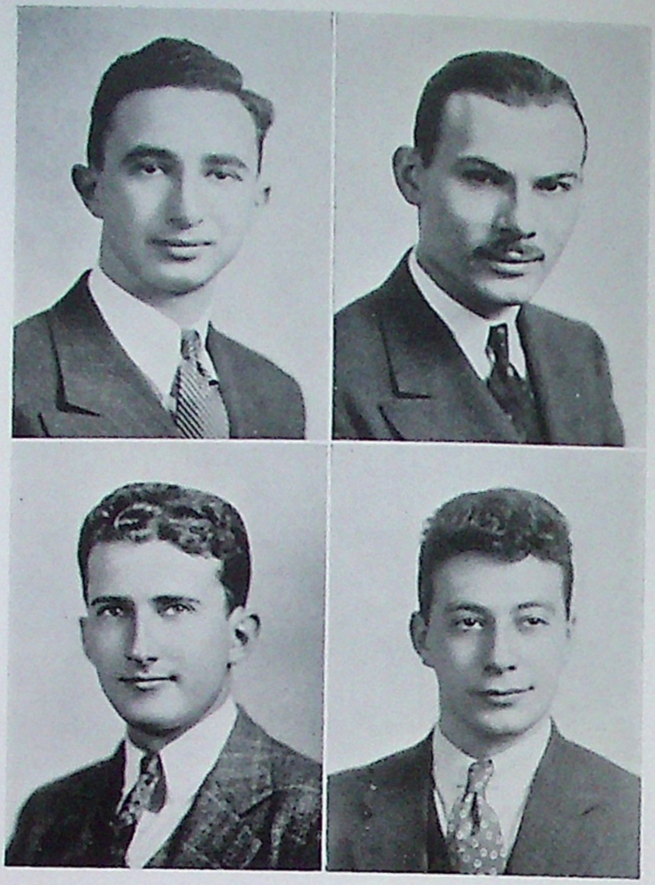
Charlie Greenfeld is the Steinmetz of the class. Why, he thinks nothing at all of working out a ten effect, counter-current flow evaporator problem during his lunch hour. Of late he has wandered into such intricacies of the higher thermodynamic theory that his intimates are momentarily expecting him to tangle with the reverend Dr. Coull on the subject of the parachor (we've been trying to find out for years whether its animal, vegetable or mineral). » » **John Gumbrecht** reminds us of a high-pressure salesman. After awing the boys with a discourse on "My Day in Business," he thinks nothing at all of discussing (confidentially, of course) the latest developments in the tydro-quinone dyes encountered in his laboratory. His technique in getting chummy with the instructors is beyond our poor, fuddled minds. We openly disdain the practice, but inwardly wonder how'n hell he does it so neatly. » » **Ruthie Katz** is the reason why so many distraught faces are apparent in the ranks of the "stink" boys. Our instructors never let an opportunity go by to remind us what honor she has heaped upon our unblushing heads by being the only girl graduate of the Night Engineers. While we smile indulgently at such presentations, we inwardly wish that the date of her entrance into this careworn world had been antedated from that of her contemporaries. At that, we must admit she is self sufficient; all she seems to require is one clean handkerchief per final exam. » » **Bob Owendoff** is a garrulous gringo who, in medieval times, could have held some such position as purveyor of cat's meat to the lord mayor of the realm. His bid for fame was a superb collection of seven wash bottles, three Mekka burners and miscellaneous pieces of rubber tubing, having achieved this feat in chem lab (was his face red when Harry, the lab assistant, discovered the loot). At present he's trying to keep a jump ahead of the game by leaving his overcoat in the library so's he can sneak out of Phys Chem Lab.



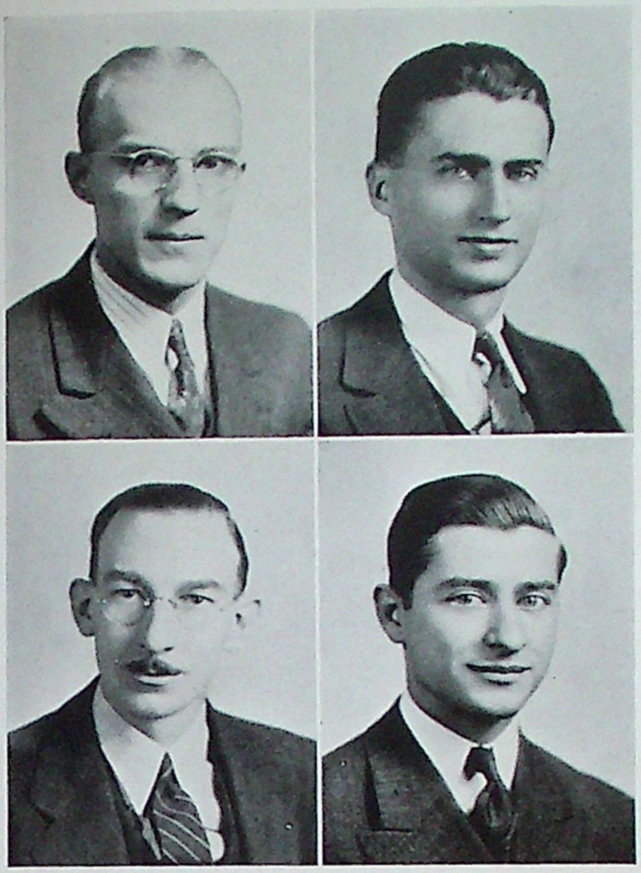
Joseph Pearlstein has been a bureau of information for the chemical engineers. Without his neat solutions of E.E. problems, we fear the potential tycoons of chemistry would be but poor pawns in the hands of the transformers and polyphase circuits. The boys were thinking of buying him a mimeograph machine for Christmas, so as to save him the trouble of passing his paper around. His big concern at present is that his son (aged 8 months) is responding very poorly to the duress of solid geometry to which Joe subjects him. » » **Alfred Schmutzler** is noted for his many tedious calculations on problem papers, but that is hardly his greatest claim to fame. Though all of us cast occasional glances towards the fairer sex of the night art school, it remains for Alfred to pursue this indoor sport with the fervor that is its due. With a bluntness born of Teutonic ancestry, he stares down the winsome lasses so conveniently located to the Unit Ops Lab. » » **Frank Skrek** is the individual to whom we point the finger of pride when asked to what extent our achievements have extended in the business world. Already he is an expert production chemist; one fine day he will blow himself gloriously into the nether world, to the everlasting fame of the species. However, lest one doubt that this Titan of industry is of mortal flesh like the rest of we 'uns, one has but to watch him trekking for that certain Hungarian beer joint after Friday night classes. » » **Louis Tobey** is the traveling man of the class; yeah, traveling from one job to another. After extensive research work we have discovered that he's the only lad who puts down his Phys Chem experiment readings **as is** (the rest of the brain trusters use the carbon-cellulose method to good advantage). He will long be remembered as the boy who, in the stillness of the lecture room, popped the question "But what **is** fugacity, Professor Coull?" It just wasn't cricket, old cull.



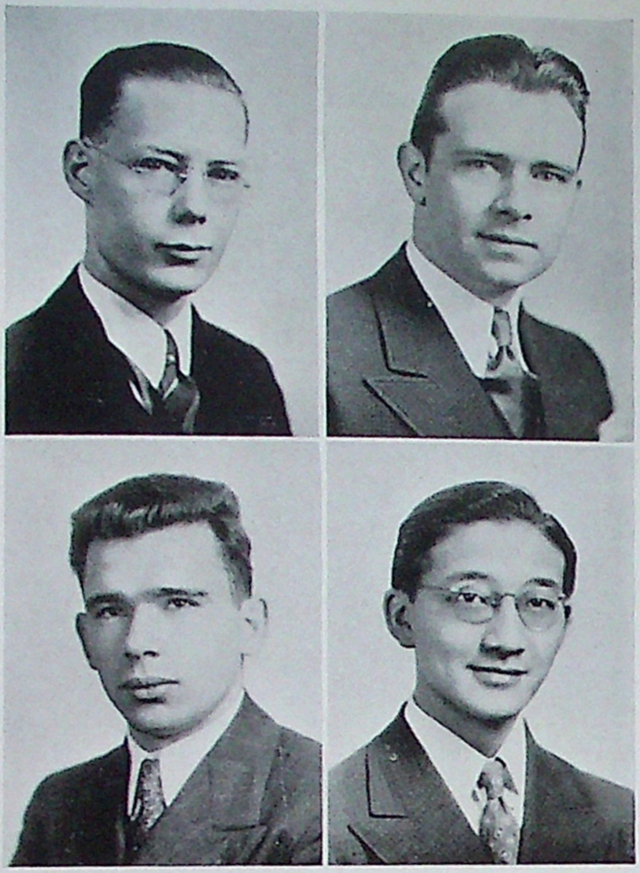
The best description of **Kenneth J. Chichester** is that he is a tall, quiet, good-looking fellow with a sense of humor. Ken is a good mixer and is one of the "two light, one dark" elbow-bending combination. He has been employed by the Bell Telephone Company for the last ten years which is a good indication of his ability. An excellent draftsman, his work is the envy of his classmates in the Machine Design class. Chi is the foremost of the wayward husbands in the class. » » Get **George V. Fitzgerald** started talking about locomotives, steam engines, or Punch and Judy shows and he's off. Fitz is an accomplished puppeteer and a member of the American Society of Magicians. He has a knack of taking things in his stride and coming out on top—for which he has earned the respect and admiration of the class. A thumbnail sketch of Fitz would note that he is serious, studious, conscientious, friendly, and very clever. » » **Richard D. Oldham** is billed as the "singingest" Oldham you eber seed, yassuh! Next to his singing, Dick is noted for his rapid journeys up and down stairs—so rapidly that the resulting impact at the bottom broke his arm. However, he is again able to bend his elbow as a member of the "two light, one dark" committee. As a third point of distinction, Dick is the timekeeper of the class (correct to 0.001 second) and delights in noting that the clock in the M.E. labor is out 2.234 seconds. » » Tall, athletic, and with a smile as big as a house, **Jacob D. Schiller** is the dark in the "two light, one dark" assembly. Jack must have been given a slide rule to cut his teeth on because his interest in the subject has continued ever since. For his devotion to the cause, he was elected chairman of the student branch of the A.S.M.E. as well as to numerous class offices. Jack's buoyant spirit has made him stand out in the class especially during the past year since he became attached to a better half.



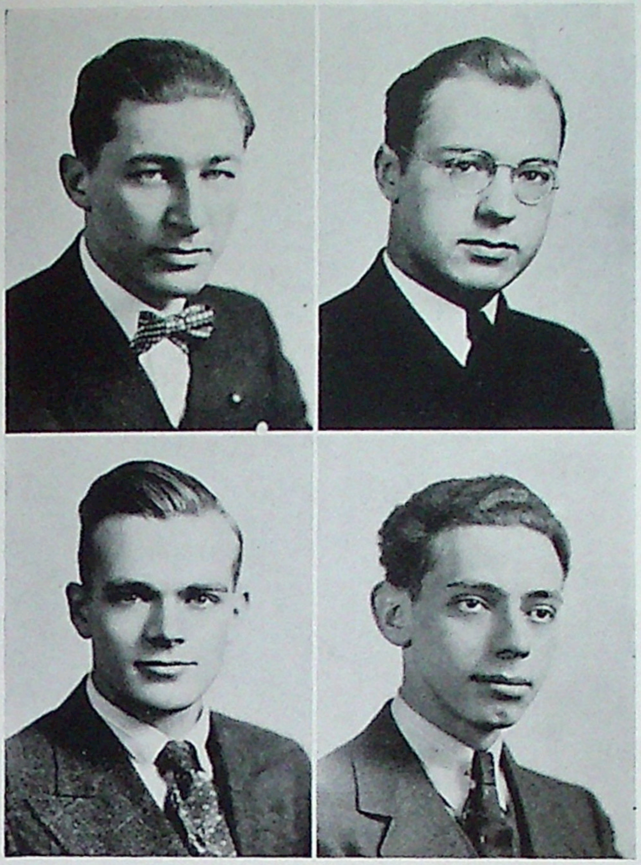
Another of the boys who comes from Brooklyn, **Morris Welling** is noted for his ability to derive any and all equations. He has even been accused of re-deriving each formula he used just for fun. His friendly social qualities make him well-liked by those who know him—he has been one of the steadying influences of our battered group. Welling's pet story is the one about his Heat Power course in coal shoveling with its determination of the B.T.U.'s in each shovel. » » **Johnnie Alexander** . . . first of Night Civil Engineering trio . . . married . . . wife's name Mae . . . one child . . . June, age one . . . work—designer at Brooklyn Navy Yard . . . knows good music and likes it . . . ambition—to become a teacher . . . at present engaged in making the ships to fight our nation's battles . . . very, very cultured looking . . . swell draftsman . . . quite athletic . . . swims like a fish and so does June . . . lives in the wilds of the Bronx . . . works in the mires of Brooklyn . . . great guy . . . he'll go places. » » **Sanford Koretsky** . . . only everybody calls him Sandy . . . a taste for the finer things in life . . . especially good music . . . works at taking vibrations out of moving machinery . . . stop the shiver, stop the shake . . . ambitions, one a minute . . . bubbles and is too enthusiastic . . . punk draftsman but knows how to get the other guy to do it for him . . . someday he'll have the prefix Dr. . . . probably won't get far but will have loads of fun on the way » » **Sam Sigman** . . . nickname "surveyor" . . . runs the gun for W.P.A. . . . and boasts about it! . . . big brother graduated Cooper Night . . . little brother now attending Cooper Night . . . ambitions, to rebuild Spain after Franco gets through tearing it down . . . big brother went to Russia after graduation, so traveling is in the blood . . . a great guy with the "chippies" . . . lives in Manhattan . . . works in Manhattan . . . quiet fellow but knows his stuff and has always delivered . . . a swell fellow to know on a lonely Saturday night.



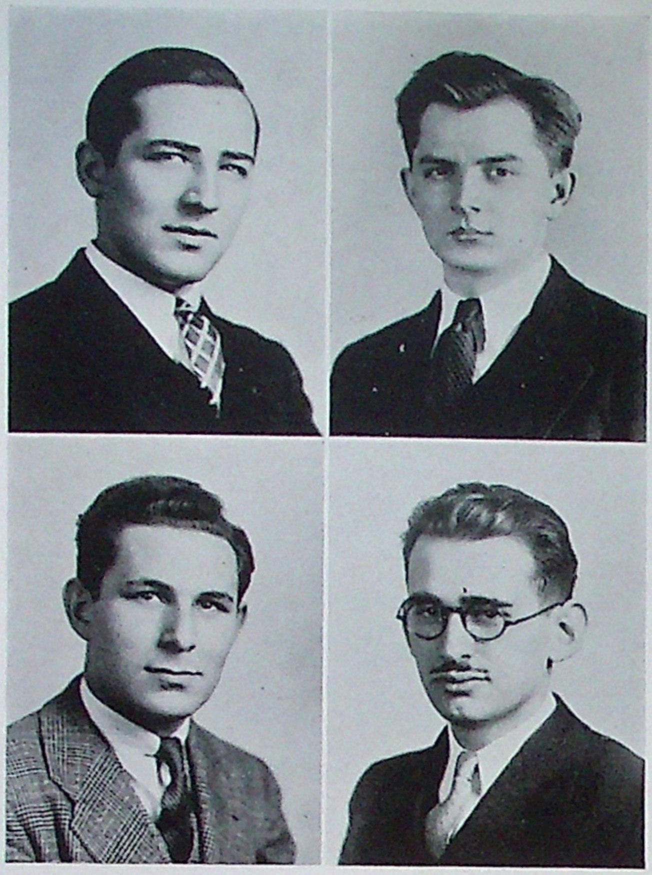
Edward J. Ezell, the boy-wonder from the wilds of New Jersey, heads the list of the Night E.E.'s. Sometimes falls a bit behind in his assignments, but always catches up on time. Ed, who incidentally is quite a mathematician, performs his daily chores in a motor repair shop. A veritable wizard at chess, Ed has been known to play blindfolded and defeat four of his classmates. Besides being and excellent student, Ezell is a likable chap and will go far after graduation. » » **Herman C. Hornickel,** or "Bill" as his many friends know him, is the class politician. He has been a class officer for lo! these many years, and president of his senior class. Bill's specialty is wired music and communication in general. Usually rather quiet during class, he suddenly sprang to life at the inception of the course in communications and his colleagues have been attempting to subdue him ever since. Popular, Bill has already made his way in the scheme of things. » » **Effingham Van Bueren Kettleman** (whew!), tall, dignified, temperamental, has a system for everything. Ket has the advantage of at least a decade of practical experience in the electrical field, most of it being in the specialized branch of high fidelity sound reproduction. Best known for his humorous stories, yet best remembered for a logical mind, Ket could always be relied upon to ask a sensible question at the most opportune time. Good luck old man! » » **Andrew R. Levada** is the soul of punctuality. We doubt if he ever turned in a lab report late during the six years he has spent in Cooper. But seriously, Andy is a good student—especially when it comes to differential equations (of all things). He is a designing draftsman and a good one too. Andy intends to study for his master's degree immediately following graduation and we're counting on him to uphold the reputation of his alma mater.



George Melville Phillips (so that's what the M. stands for!) is the second Jerseyite in the class. A stickler for details, George will argue for hours about almost anything. He is treasurer of the senior class and of his fraternity and a loyal member of the A.I.E.E. George is employed by the Bell Telephone Laboratories where he spends the company's time attempting to eliminate noise interference in telephone circuits. Conscientious, and a good worker, George's future is assured. » » **William G. E. Vreeland's** versatile abilities have kept him at the head of the class during the long grind. His neat and carefully-worded lab reports are the envy of all. For two years his aggressive friendliness secured him the post of Chairman of the A.I.E.E. He was Associate Editor of the 1937 Cable as well as a member of the Blanket Fee Committee, in that year, winding up as Editor-in-Chief of the 1938 Cable. Bill likes to talk about his work at the Edison Co., where he is a designing draftsman. » » Prominent in the Ch.E. section by virtue of the alphabetical arrangement of his name, **Samuel Baum** has managed to come through Cooper Union without losing his broad grin and his sense of humor. In addition to these assets, Baum is widely known for his vigorous opposition to any plans designed to shake shekels from the pockets of unsuspecting students. It is rumored that with the experience he has obtained, he may become a politician in the event that chemistry does not prove a profitable venture. » » The parents of **Alwin Chen** wanted him to learn Chinese but he is so much of an American and he had such difficulty with the tongue of his ancestors that he gave it up as a bad job. Al, coming to Cooper Union after a year at Newark College of Engineering, demonstrated that he had no such difficulty with English—particularly with those terms covering Chemical Engineering. Chen's hobby is photography. His pet peeve is that for the last two years, he hasn't found time to sleep, much less take pictures.

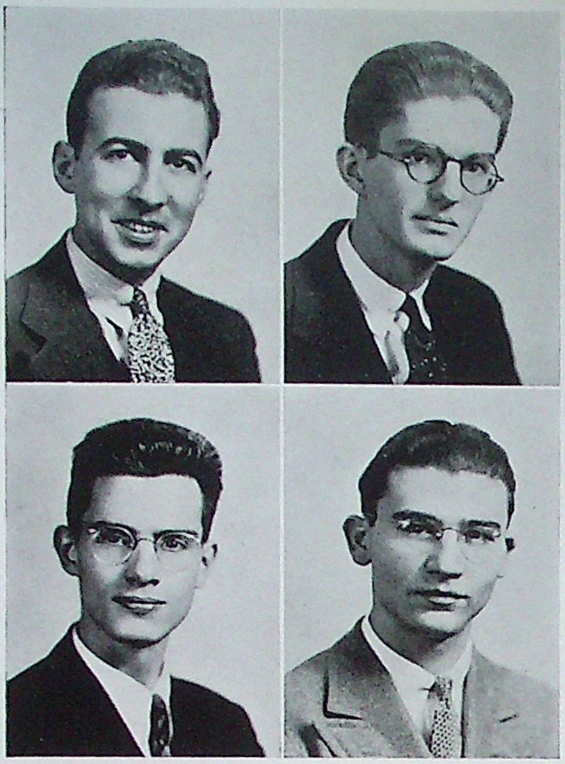


Harold Dorfman is the true personification of the Man from Missouri. No lecturer can hope to escape his barrage of questions. Hal makes up for this by laughing at the Prof's jokes—his infectious laughter being more potent than the initial impulse. He was the vice-president of the class in his Freshman year and a member of the staff of the Pioneer. In addition, he was one of the star players of the Lunch Room Bridge Club. And in spite of these activities, Harold is a solid member of LR. » » One can easily tell from the appearance of **Stephen Duch** that he represents the strong conservative element of the class. He is tall, well-built, resembling a typical college athlete. Steve is an easy-going fellow; amiable and well-liked by all his classmates. He is not a brilliant scholar but he keeps working steadily never letting too much work pile up. In his Senior year, he was elected class treasurer and chairman of the Cap and Gown Committee. » » The big brain trust of the class is **Robert Egbert.** He seems to do less work and get better ratings than anyone in the class. As a token of the high regard which the entire class has for him, he was elected president of the Junior Class. Bob is active in extra-curricular activities also, as evidenced by his membership on the Pioneer Board of Control and chairmanship of the Annual Dance Committee. His big bid for fame was his solution to the Senior Class Problem which was sent in to compete with the best solutions of other colleges. » » **Harold J. Kandiner** has demonstrated clearly his right to a place among the scholastic leaders of the class. A recipient of an Emil Schweinburg Scholarship, he was one of the five Juniors elected to M.A.O. "The man with the wire-brush hair" is famous as the inventor of numerous complicated problems. These take several weeks to solve and are best described by the word pesky. Aside from these brain-busters, Kandiner's interests center on current affairs and his political discussions enlightened many members of the class.

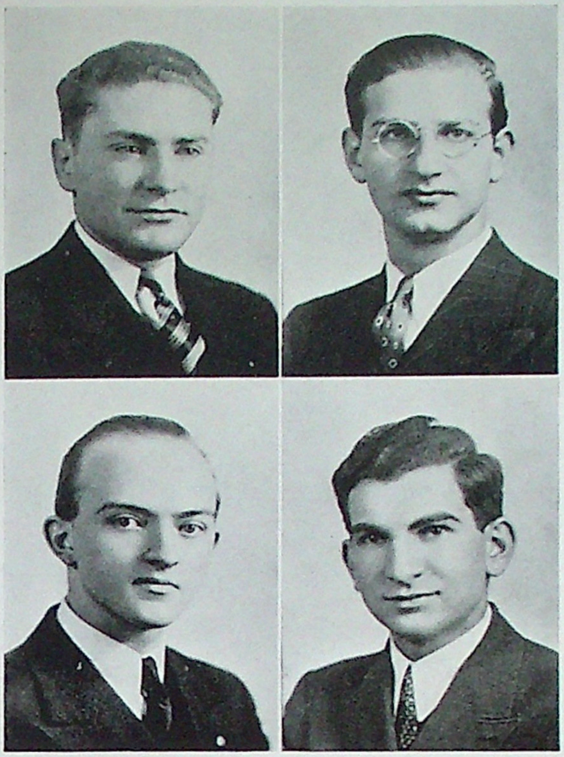


Indicating his ability to form public opinion through the medium of the spoken word, **Joseph Koosman** was chosen guest lecturer for the Freshman Reception of the Day A.I.Ch.E. (as Professor Watta Wack). Joe's confessed interests are for the opposite sex in social relations, and for batteries in technical relations. As a non-dancer, he gets along remarkably well with the ladies due to his well-developed line of small talk. And despite the Prof. Watta Wack, he made good with a prominent battery manufacturing concern during the summer. » » **John Kordak** is a member of the well-known "Squad II" in the Engineering Chem Lab with the infamous company of Duch, Egbert, Stadnitski, and Zernow. Kordak is the only saving grace of the squad and the rest all admit it. John's induction into the Cooper honor society is due, he claims, to his ability to figure out the profs and anticipate their quiz questions. But some of the other boys tried this system with entirely different results. Perhaps it was the 139 he hit in bowling once that makes the difference. » » **Albert Krasnoff** is one of the athletics of the Chem Engineering section as is evidenced by his membership on the varsity basketball team for the last three years. Al is an active member of the A.I.Ch.E. as well as a prominent member of LR. Though not normally considered an intellectual, he was one of the four to hand in a solution to the 1938 A.I.Ch.E. Contest Problem. A jovial, well-liked fellow, his secret ambition is to win a Nobel prize. » » When **George Landaw** first grew his soup strainer mustache, it took several months for his fellow students to become accustomed to it. Now, no one would recognize him, were he to shave it off. As the mustache grew, his marks did likewise with the result that he was elected to M.A.O. in his Junior year. George has an uncanny knack of coming to class with all the work given on the previous day completed. This habit hasn't proved very harmful to him as his scholastic standing shows.

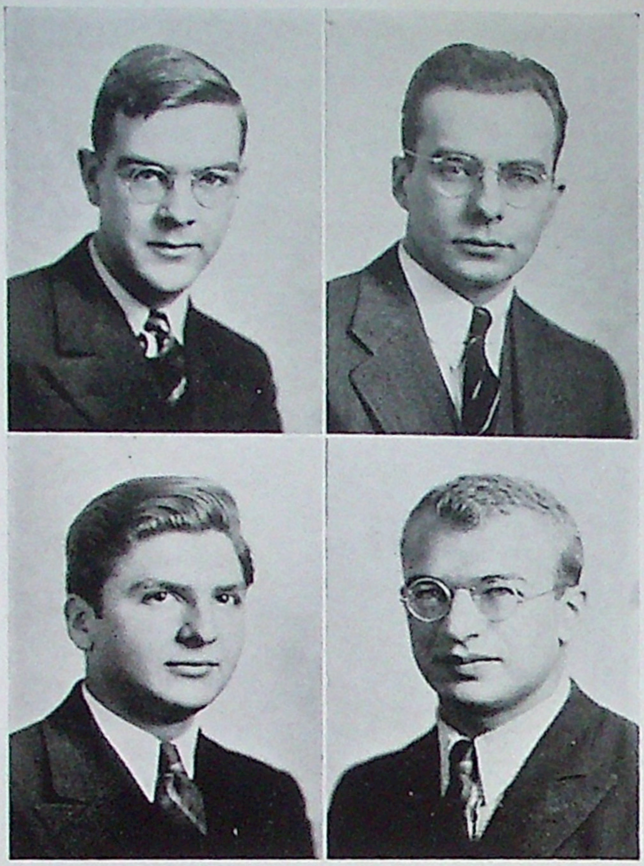
Charles B. Miller is known far and wide for his humorous and interesting stories which he has run across in his wide reading. Charlie is a staunch admirer of Mark Twain and can quote page after page of the master's stories. As president of the student branch of the A.I.Ch.E., he did a fine job keeping the section interested and active. Miller's ability as a scholar is evidenced by his election into M.A.O. and by the fact that his solution of the Contest Problem was one of the two accepted. » » **Michael Purr** is an easy-going fellow who lets nothing disturb him—except mechanics, unit operations, mathematics and thermodynamics. He is not a member of Lambda Rho, due to his abnormal ability to hand in reports on time. Mike is a handy fellow to have around—his work in Eng. Chem. lab has developed him into a first-class tinsmith. Yet with all the work that he does, he still has time to be an active member of the A.I.Ch.E and of the Math. Club. » » **Israel Reff** has his serious side but he is noted more for his activities when in a lighter mood. Everywhere, most any spare time, on anything handy, Reff is found constructing his "pen and ink" sketches. He's good too. Reff's ability to forcefully express some of his ideas has found admirable application in the Math. Club, in which he has been an active member, and in the laboratory, where time has been his only conqueror. When he has an idea, his lab assistant, partner to anyone else, has no chance against this human dynamo. » » One of the quieter members of the class is **Philip Jackson Rennolds, Jr.,** who distinguished himself by attempting to blow himself up in the laboratory the day of the Freshman Reception. His scholastic accomplishments are myriad—he was inducted into M.A.O. in his senior year. Jack has also been secretary of the student chapter of the A.I.Ch.E. and vice-president of the class. In the lab, he is known as the most-hard-to-satisfy partner and when he gives his o.k., you know its o.k.



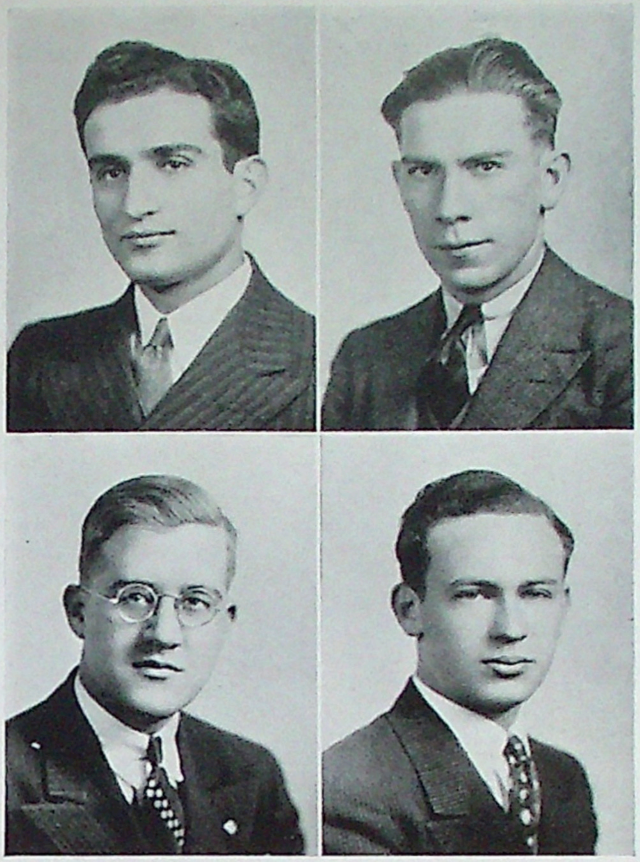
Among other things, **Herbert Siesholz** claims to be a gentleman, a scholar, a lover of the humanities, and a devotee to all that is beautiful and good. Although the consensus of opinion in the class might not coincide exactly with the above, Herb is known as the Casanova of the section. As evidence of his versatility, he is a member of the M.A.O. Herb is a prominent member of the A.I.Ch.E. and when not engaged in scholastic or extra-curricular activities, can usually be found in the Art School. » » Among the vices of **Robert K. Stadnitski** is a tendency to shift laboratory work upon the shoulders of his lab partners using cajolement, threats, and even blackmail to achieve his ends. Bob has worked two lab partners to death in this manner. He is an expert mathematician, philosopher, and an expert at the finer arts of pool and pinochle and a connoisseur of food and liquids. One of his ambitions is to be a man of the world. » » **Louis Thoman** is characterized by his lankiness and his broad grin. Noted for his ability as a chemical analyst, he can usually be found making some complex analysis which would baffle the average chem student. One of his hobbies is photography and he can often be found embarrassing the profs by taking pictures in the middle of a lecture with his candid camera. Lou is the treasurer of the Newman Club and can often be found with various tickets to sell. » » **Louis Zernow** distinguished himself early when in his Freshman year, he obtained the highest average of the Ch.E.'s and thereby won the A.I.Ch.E. prize. His scholarship ability waned in the later years due to his remarkable ability for procrastination when it came to homework, and to the diversion of his energy into extra-curricular activities. In his Senior year, Zernow was elected class president and subsequently became president of the Student Council. Despite this, he continued to be an active member of the rifle team participating in a number of intercollegiate matches.



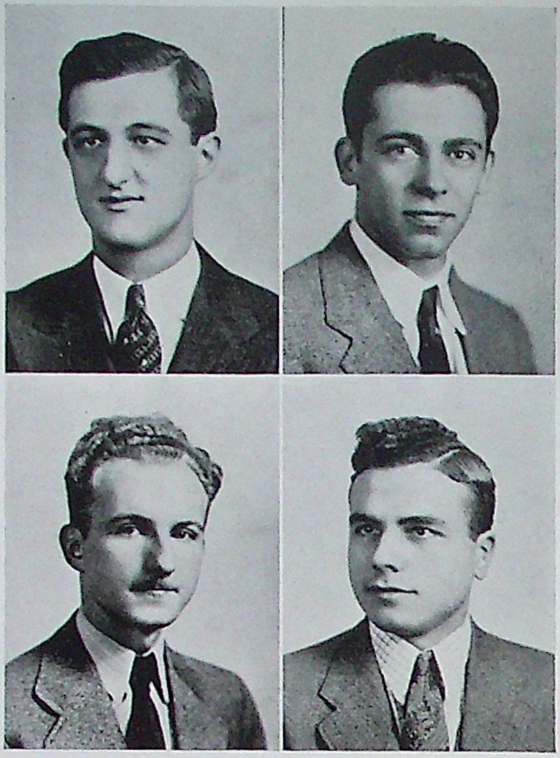
Julius Agin has been at the head of the E.E. Class for four years. The rest of the section has been envious but after all, one can't change one's name to displace Agin in alphabetical order. Julie is interested in bicycling, clocks and a certain little brunette, but despite all these distractions, manages to live up to the A in his name. Alpha Mu Sigma claimed him early in his school career with the result that its social life was livened considerably. » » Ambition nestles in the bosoms of all of the class but **Charles Guy Cambridge** has garnered a major share. He's starting out to be a designer of electrical equipment but that is only the beginning. Besides writing sports for the Pioneer during his freshman and sophomore years, Charlie was assistant manager and then manager of the varsity basketball team. He is also an active member of A.M.S. fraternity. Charlie likes swing music and girls to swing with but his lab reports still come in regularly. » » One of the fellows who was seen but not heard very often was **Harold E. Cozine.** Hal attracted very little attention to himself except on those occasions when he made tests to see how much unbalance he could find in the induction motor circuits. Because of the time spent on this research, Cozine had little time to waste. He managed to eat and sleep during a few intervals and to turn in his homework and lab reports on time. In one of his spare moments, Cozine likes to get up to the library behind a copy of "Esquire." » » **Lawrence Dunkelman** is one-half of the team of Dunkelman and Knopfle, specializers in burning the midnight oil. Larry hails from Paterson, where the waters of the Passaic River come up to the front door on occasions to give him an excuse for lab reports extensions. Since he moved to Kew Gardens to room with Knopfle, the latter's ear has taken the place of the river. Yet with all these interruptions, Larry has managed to come through school in four years and work in the E.E. lab besides.



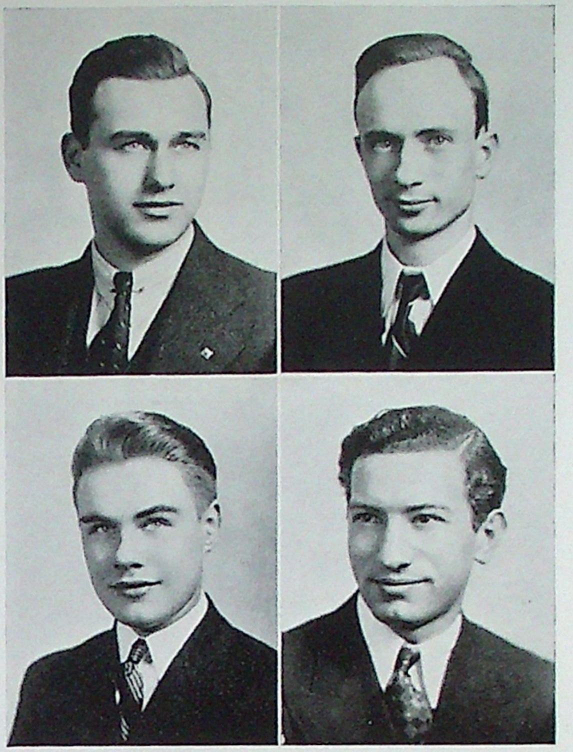
Charles J. Eiwen will be remembered for his fighting tactics in the intramural basketball games, as well as for his stout work on the Cable. He is a born sceptic. To the pet theories of his classmates, often expounded in the most convincing terms, he replies: "Well, I don't know, that's pretty complicated." No one will ever put anything over on Charlie. He keeps posted on current literature, being probably the best customer of the Cooper Union library. » » Valley Cottage's gift to the Cooper Union is **Hamilton Gaillard.** He boasts that he has traveled at least 50,000 miles from his home to the city to attend school. We believe after this expenditure of carfare that the Cooper Union ought to at least allow him to graduate cum laude. Ham had a special aptitude for turning in homework in Heat Power that was marked excellent so he never quite got over the shock when Mr. Vopat said that homework would compose 5 per cent of the final rating. Gaillard is specially proud of his girl friend, his knowledge of all types of gas and steam engines, and the fact that he has been secretary and then president of the day branch of the A.I.E.E. » » **Samuel Goldman** and **Jerry Goodman** have been together so long that it would take more than the Cable to pry them apart. The greatest tragedy which befell the two partners occurred when Goldman sat at the end of one row and Goodman at the beginning of the next for an entire term. For a time there was some discussion as to whether the two would grow to be indistinguishable but the final conclusion was that Sammy's figure (or should we say that his mother is a good cook) and Jerry's haircut would always mark one from the other. His slide rule work which produces four as the product of two and two marks Goldman as a genius while Goodman's ability to do Mr. Tallman's problems has been unsurpassed. Goldman's interest ranges all the way from the Rifle Club to Gilbert and Sullivan—Goodman restricts himself to Maxwell and tensor analysis. Yet it has been possible to offer rewards for anyone who could see the two apart without risking the money.



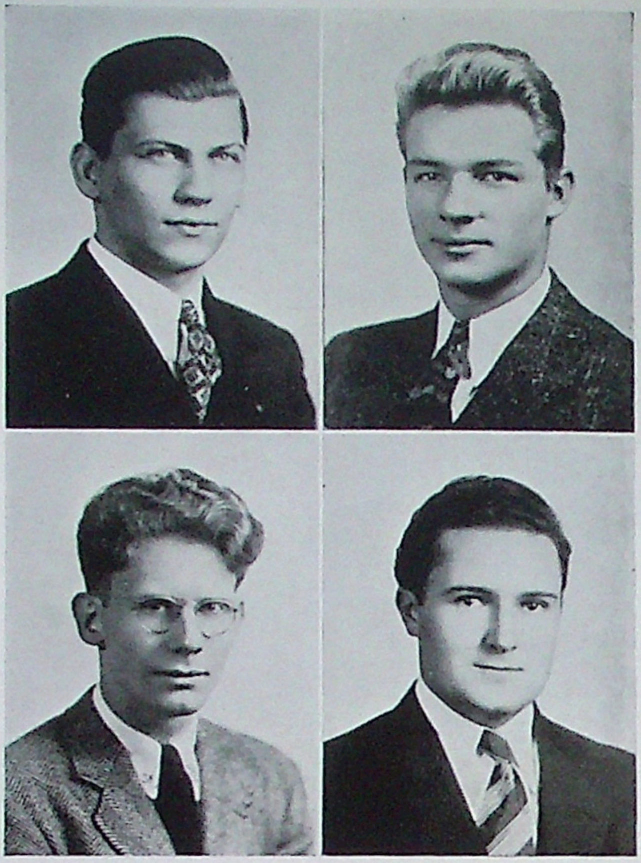
One of the members of the class who will not be forgotten easily is **Jacob Herman.** Jake says that he has slept, studied and even had some time for recreation in the last four years which would not mark him as unusual, but somehow Jake impresses those about him. Perhaps it's his ability to dig answers to problems no one can answer from books—or his special technique of putting his opinions in a concise manner—or his knack of coming to class just on time—or to the fact that all skies are blue to Jake. » » **Woodrow H. Holdsworth** has been pursued by a relentless fate. Although he studied commercial subjects in high school, his path through life was deflected into the technical maze of the Cooper Union curriculum. After years of arduous toil, during which he worked at night and often slept through day-time classes, he at last came within sight of the treasured B.S. degree. But alas, slide rules and blue-prints are not to be the tools by which Holly earns his future livelihood, but sirens and ladders instead! » » The outstanding seaman in the class is **Sigurd Ipsen** who makes a daily voyage to and from Staten Island. Sigurd must come from a long line of seafaring folk, for even the fog over the river or the ice floes in the bay could not halt his cruise. However the class could tell how bad the fog was by noting how many seconds late Ipsen was. These trips to the mainland were prompted by Ipsen's desire to become a designer of electrical equipment—to make ferries go faster, perhaps? » » One man who knows he's right when he is right is **Joseph D. Kerstein.** Joe's favorite expression is "that's easy" which sometimes strikes the wrong chord to us hard-working mortals. How Joe manages to find the answers to some problems, we don't know, but some sleuth reports that he borrows heavily from libraries. Joe enjoys making semi-annual trips about the city with that certain girl from Albany. They must be healthy trips because Joe's pet expression fairly leaps from his tongue, afterwards.



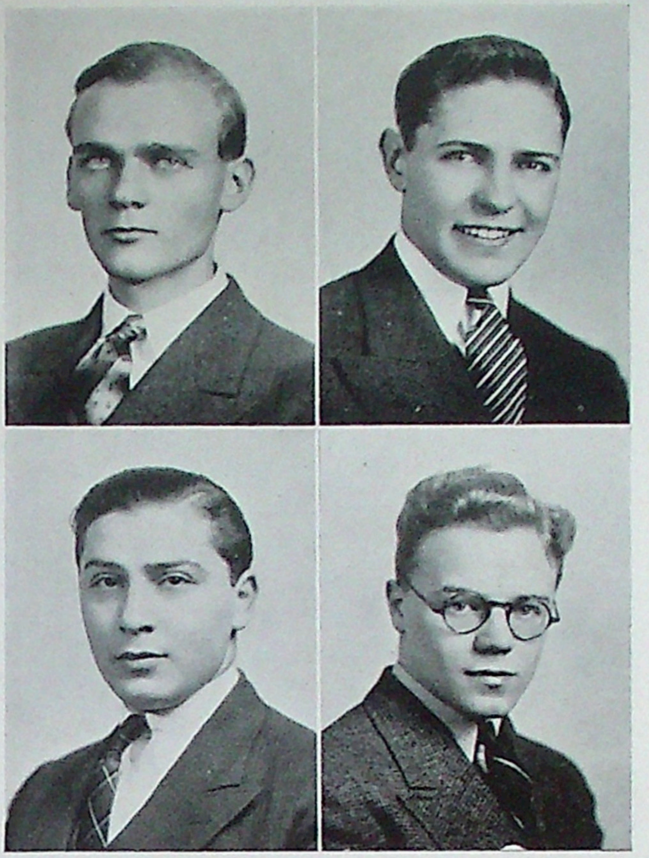
Genial **William Knopfle** is about the tallest fellow in the section. He's the one who pushes the ball in the basket for the class basketball team and who pushes his car and Larry Dunkelman to school each day. Willie will be glad when summer comes for it's been a hard push and late marks in Prof. Starr's book have been multiplying. When Knopfle isn't helping someone out, he's concentrating on his machine lab reports or looking for those five thousand words for Engineering Considerations. » » **Alex Lehrer** is another of those New Jersey boys who come to New York to show the natives how to do things. He was a member of the intramural basketball and water-polo teams, but most classmates remember him for his ability to analyze machine problems. Alex is proud of his knowledge of politics, his shower-room renditions, and his dexterity as a waiter. This latter skill came in handy during the summer when the price of books had to be accumulated. » » By far the most versatile fellow in the section is **William T. McShea.** The majority of the class has just been able to come to school and go home to do their homework, but Bill has found time to be Vice-chairman of the Blanket Fee Committee, Associate Editor of the Cable, member of O.D.P. Fraternity, and Vice-president of the A.I.E.E. day branch to mention a few. Bill has a peculiar knack of doing homework in six hours which takes others ten hours, which explains his accomplishments. » » Unlike most of the members of the class, **Abraham G. Merlin** can let loose a flock of words about most things in general and radio in particular. He likes to talk about Q-meters or magnetostriction oscillators which may mean something to somebody but not to us. Naturally, Merlin's ambition is to become a radio engineer. After satisfying this ambition, A. G. is anxious to get off on a trip around the world to allow the air-waves to quiet down a little while, perhaps!



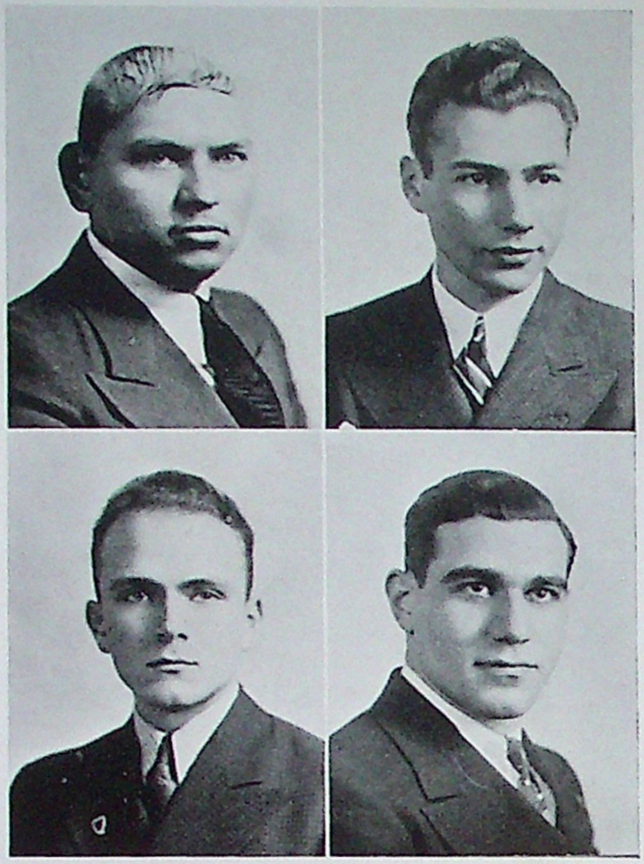
If the idea persists that a good athlete is always a poor scholar, **Daniel Ozsvath** is the man to dispel the notion completely. Ozzie has been captain of our class basketball team for four years, besides being one of the first out for baseball and water polo teams. Yet he is always up near the top scholastically. When the fellows in squad 5 get together, it is generally Ozzie who knows what happened in the laboratory, why it did and what must be done about it. » » **George Carlin Pierce** is one member of the class who conceals his ability. We all know he is a good baritone but we haven't been invited to one recital in all of the four years. Pierce likes to obtain freak snapshots such as the one of Peter Cooper standing on his head, but up to the present his best effort with his new camera has failed to budge the statue. George enjoys Langsdorf's text on geometry, any comedy, and music by Al Goodman, all of which go to show that a man's middle name is misleading. » » One of the minor achievements of **Paul Weber, Jr.** was the fact that he led the section scholastically for his four years here. Most distinctive of Paul's characteristics is his laughter—every teacher at one time or another has wondered whether Weber keeps a pet hyena in his pocket or not. Not content with his high marks, Paul has worked as Physics Laboratory assistant, gone to the gym to play basketball, and shaken a mean leg at the social events. » » **Harold Dresher** gives his seat to old ladies in the subway but is more partial to the younger ones. "Hal" is the mechanic of the M.E. class and when a question in automobile design or maintenance comes up he usually has something to say. His favorite school activity is "kibitzing" any and all bridge games. He turns to photography, radio mechanics, and dancing for his extra-curricular relaxation. Dresher's ambition is to be an automotive engineer and to see his dream car on New York's streets.



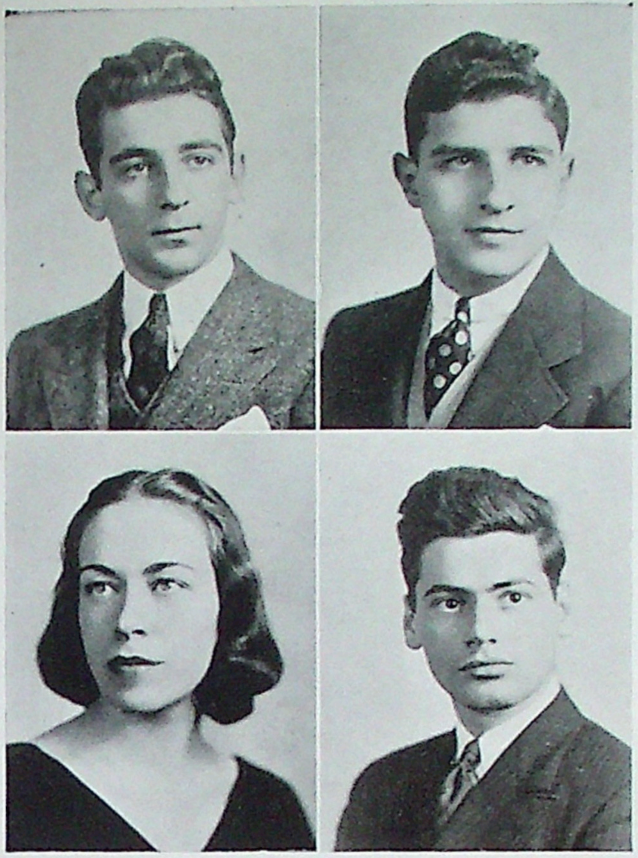
George A. Dmitroff has the special talent of getting into all sorts of arguments. His favorite diversion is conversing with a classmate in their native Russian. He plays a mean game of bridge or chess. "Dimmy" says that all the semesters were a succession of tiring days and sleepless nights. His ambition centers around "getting a good job," preferably as an engineer in the government service. » » **Alexander Matiuk** is the only member of the M.E. class on the "four year plan." He is the "party of the second part" in the Russian conversations mentioned before. Mr. Matiuk has combined his scholastic ability with service on the Blanket Fee Committee, and active participation in the affairs of the student branch of the A.S.M.E. Hobbies of his range from playing the violin to gymnastics and auto-driving. His ambition is to work at the design of mobile power plants and to own his own home in the "suburbs." » » As perpetrator and perpetuator of the Fencing Club, **Dale C. Robinson** has coached an ambitious group for four years. He prefers spending Friday nights at a fencing academy where he vents his feelings by drubbing or being drubbed with a sabre. In the summer, he takes a three hundred mile hike, so as not to forget "the feel of rain on my face." As to ambitions, Mr. Robinson reminded the Cable that "Caesar was ambitious, and look what happened to him," before admitting he would like to test power plant equipment. » » In his individual history for the Cable, **John J. Peirano** gives his activities for 1933-1936 as "rifle team, rifle team, and rifle team." In the fall of 1936 he experienced a change of heart for the entry is, tersely, "homework," and, in 1937, "more homework." Peirano turns to swimming and carpentry as hobbies, and prefers a good book, opera, and redheads for entertainment, but adds, "not necessarily in that order." His "raison d'etre"? Aircraft engineering, and owning a Cord roadster.



The quietest fellow in the class is **Oldrich Wild.** He was dubbed "Oscar" during his Freshman year, and the name stuck. When asked for his personal history he complied quite readily—with eighteen words. These words covered his school activity, his hobbies, ambitions, special talents, and entertainment preferred. Activities? One year with the orchestra, two years with interclass basketball, and two years blank. After graduation, Oldrich hopes to become a designing engineer. » » For four years attempts have been made to drown or maim **Charles Walter Dohn.** These efforts under the guise of intramural athletics, have resulted in producing a black eye, a broken toe nail and numerous rents in his flesh. This has so affected him that in his Senior year he undertook the additional burdens of an editorial position on the Cable Staff and the Management of the waterpolo tournament and swimming meet. Charlie has a secret desire to be able to spring up and flood the atmosphere with an accurate, comprehensive and loquacious answer when called upon in class by Professor Brumfield. » » **Abraham Goldstein** owns a circular slip stick which like all dyed-in-the-wool circular slide rules has reached the stage where it begins to shed its scales. Goldie still hangs onto the relic, claiming the confidence of its sentimental value far outweighs its slight inconvenience. Eight or nine missing divisions on the C scale (Goldie has the G-men looking for them) are no handicap to Goldie who automatically jumps to the CI scale whenever he hits this well-worn spot. » » Various other members of his class threaten **Robert Hammond** with all manner of dreadful mayhem in a futile effort to stop his jolly chanting of "Old McDonald Had A Farm." Bob burses the shekels for Mu Alpha Omicron, the school honor society and was class secretary for 1935. He is taking an honor course in aerial surveying and if you have time he'll write you an equation several yards long and two stories high which "can" be used to find elevations from aerial photographs.

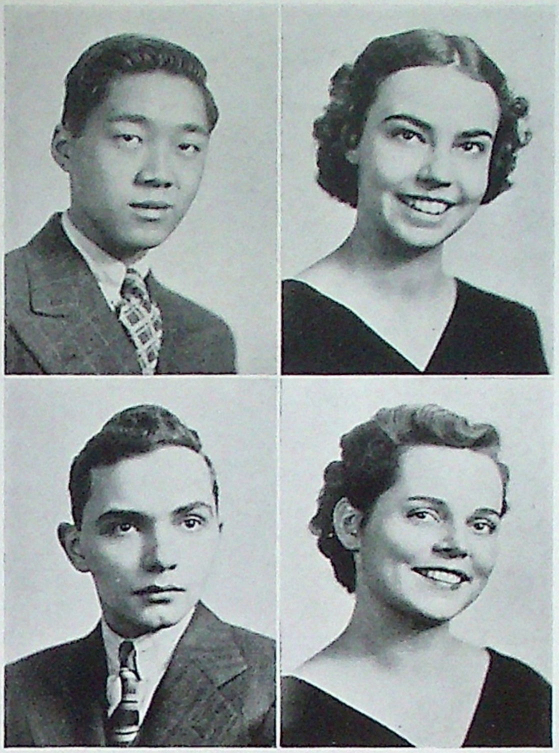


John Kachura may be frequently seen in the midst of a group of his fellow studes gesticulating wildly with his arms. John, you see, is a devotee of the Izaak Walton sport. His deep sea activities are confined to Jamaica Bay which is just around the corner from Johnny's doorstep. Johnny gargles vodka with great zest like any good Russian which, perhaps, explains why his vocal chords are so well-oiled. He is president of the A.S.C.E. Student Chapter. » » As sports scribe for the Pioneer, Blanket Fee Committee member, captain of the basketball team and president of the A.A., **Sheldon "Toughy" Lang** has had little difficulty in acquiring the Gold C Award in his junior year. "Shell" comes to school with swollen, twisted fingers and sore knees which he claims is basketball. Like any true veteran of the sport of broken digits he would like to see Cooper beat L.I.U. in basketball. A Certain art school lass by name of "Gertie" keeps him trodding those long, long steps to the sixth floor. » » The only fellows in the school who can perform the difficult feat of spelling **Sigmund Mazurkiewicz's** name are those in the same lab squad with him. Mazurk is unusually neat in his work and unlike most engineers is artistically inclined. Always anxious to get things done on time, Mazurk comes to school on Saturdays with the blissful hope of finishing a dozen reports, two or three design problems and a few other assorted assignments. » » They say **Isidore Samuel Rosen's** smile is due to the fact that he is always in the dough. P.S.: His father is a baker. Sammy must spend a good deal of his spare time absorbing calories from his father's ovens. He dashes around in the middle of the winter with his jacket flapping in the wind, his shirt rippling over the manly epidermis of his chest.

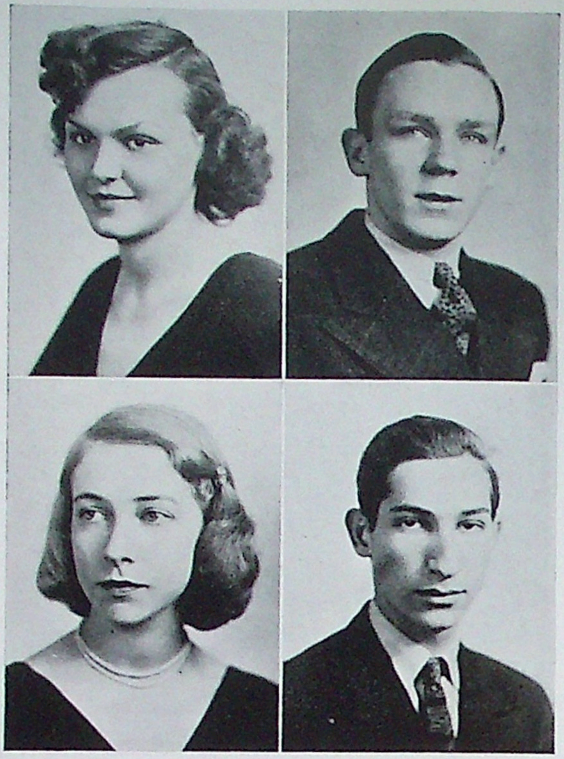


Arthur Albert will say that black is white just for the sake of an argument He'll argue about anything especially if he is un-acquainted with the subject. For three years he played baseball for Cooper Art. In his softer moments he enjoys wood carving and metal craft, and he really agrees his ambition is to become an illustrator. Right now he has a special talent for portrait painting and cartooning. » » **William Frederick Bartlett** entered school and never said "Boo" unless someone else said it first, but after Mrs. Harrison steadily praised his designs, he wouldn't even say that. William is always encouraging to his friends no matter how foul their efforts. His hobby has always been nature study, expressing itself in fine designs and paintings, even showing just how beautiful insects really are. In his Senior year he was elected secretary of his class. William majored in Advertising Design. » » **Barbara Bland** entered and suffered through the first two years but stuck to her aim—fashion. Her life-long interest has been clothes, and more clothes. In her first two years she wrote poetry for the Cooper Cub; in her third year she joined the Dancing and Glee Clubs and helped the Junior Party. This year Barbara is Art Editor of the Cable, a member of the Blanket Fee Exemption Committee, and has found time to help in the Pioneer. Her ambition is to become well-known in the fashion world. » » **Walter A. Bucholz** was one of the first boys to take the Fashion Illustration course after trying a year of Book Illustration. He says he has not regretted the change. Walter has made his presence felt both in school and in athletics by his gentlemanly conduct. He was a member of the Art staff of the Pioneer for a year, and then became Art Editor. The school orchestra found in him a valuable addition. After leaving he intends to invade the fields of illustrating, painting and designing.

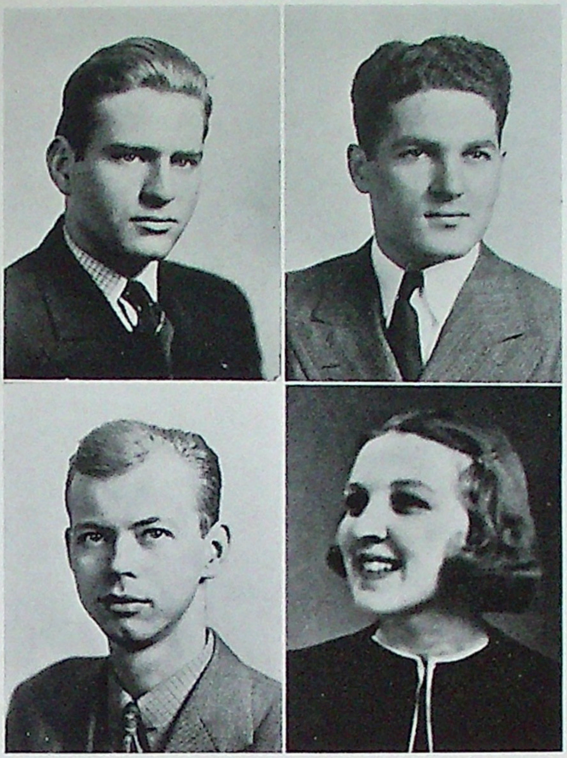
Another fashion expert is **Emma Isabelle Cook.** She is gifted in the art of making clothes from her own designs, for herself and others. She hopes to have her own dress-making house, and will be an assistant Art Instructor in Draping. One of the most active students in extra-curricular activities, she has held office in the Dramatic Club, Dancing Club, Cable, Blanket Fee Committee, and Annual Dance Committee. She is the proud possessor of the Ex Post Facto key in recognition of her meritorious service as Photo Editor of the 1938 Cable. » » **Theodore Eron** has flitted from one course to another but he has steadfastly held on to painting, getting his foundation from Eldredge and subsequently, guidance from Harrison. Ted is a sportsman; specializing in ping-pong, following that up with baseball and climaxing with dancing. When he wasn't selling signs he was selling paintings. His hobby, ambition, and talent are all the same—painting. Ted is proud of the fact that he had a painting on view at the recent Washington exhibit. » » **Virginia Hoeffler** was a guiding spirit in the Cooper Cub, the Pioneer's first rival. She spent much of her time at Cooper, reading the philosophical works of Keyserling, Pareto, Tolstoi, Emerson, Kant and Maritain; Dewey, Kingsley, Anderson, and the Bible sated her reading appetite in other fields. She tried to avoid drawing in her early existence; but her drawings belie this. She loves riding in the subway, philosophy, the movies, and unusual people. » » **Juliana Janeway** is one of those who made the class worth while, often supplying just the right touch and the perfect comeback. She helped found the Dramatic Club in her first year; the second and fourth years she characterizes as "watchful waiting." In her Junior year she was president of the class, member of the Gold C Committee, and worked sporadically on the Cable. Her hobbies are riding ferries, reading, roller skating, and Andrew McGregor (a cat). Julie, of course, has an innate sense of fashion.



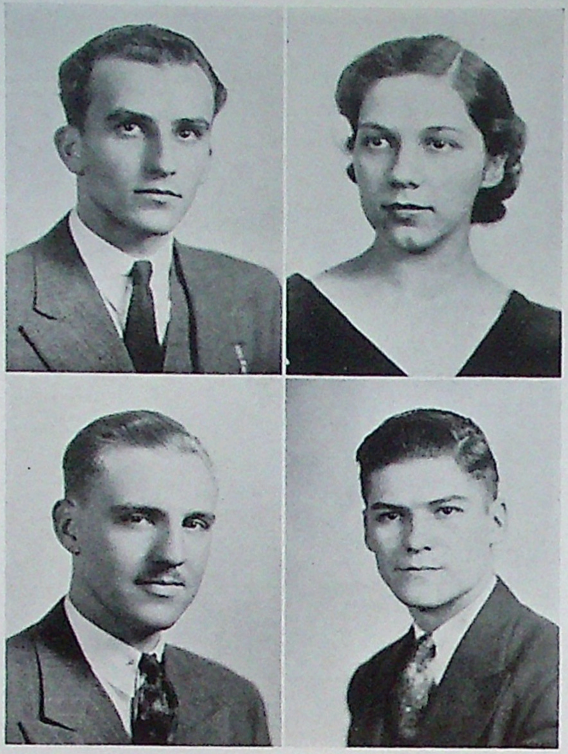
Stephen Howard Low created the Cooper Cub and won a silver medal for decorative design in his first year. In his second year he won honorable mention in drawing and lettering, and created some windows for Bonwit Teller. Howard owns the rarest sense of humor in Cooper. Ask him how the elephants got to China or why Pocohontas—. Howard likes good movies, symphonies, the opera, the Ballet Russe, books, and exhibitions. He wants to be a composer and a painter. Howard's motto is "Never kill a sleeping pig." » » **Camille Gabrielle Marten** came to Cooper after spending several summers abroad. She soon decided to "lunge" into extra-curricular activities. In Dramatics, she had the lead in "The Marriage Proposal." Camille sang with the Glee Club, danced, worked on the Pioneer, and made Ex Post Facto. She was treasurer of the Senior Class, a member of the Annual Dance Committee, and one of the co-writers of the "Lust for Art" column in the Pioneer. She is Associate Editor of the 1938 Cable. » » **John Maxon** has always loved art, although he never studied it before coming to Cooper Union. His major interest in school is picture-making, for which he won honorable mention in his second year. His school hobby was the Cooper Cub. On the side, he enjoys collecting and reading. He likes music, the theatre, the movies, art, eating, and people. In his senior year, together with Camille Marten, John did the column "Lust for Art" in the Pioneer. » » **M. Alice Mulford,** "Kit," studied at the National Academy where she won the Suydam medal for figure drawing. She aided at the various dances, and helped to operate the candy concession in her Senior year. Kit is a superb fashion student; she plans to do illustration and a bit of designing. Her sense of humor is infectious and she always knows the right answers. Kit loves to swim and to canoe. She, Munson, and Wythe were known as the three musketeers.



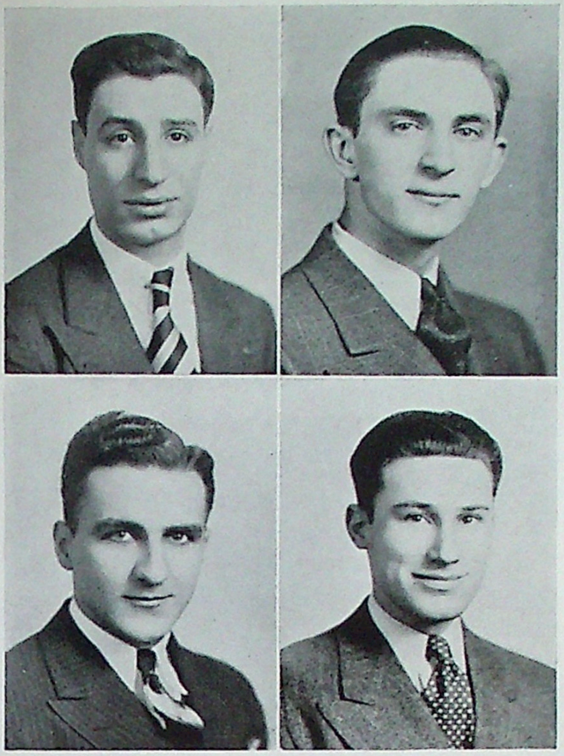
Theresa Munson sang and swam throughout her career. Always cheerful, she's the jolly sculptor. She expects to carve and paint frescoes. Tee was very clever at sewing and fashion designing though she never studied fashion. Tee's sculpture has brought her considerable renown in school, and her gaiety has brought her many friends. She was Vice-president of the Newman Club. She has always loved architecture. » » **Chester A. Post** has been a fair shot at ping-pong, a slugger at baseball, and a genius at shagging. But that isn't all, for Chet is quite a collector of prints of the great masters whom he some day hopes to reach. But until that day comes, a fellow has to live; he'll earn his daily bread doing commercial work and eventually move right in with the best designers. Tops in entertainment preferred comes Benny Goodman. Seriously he has a nice talent for painting. » » **Margaret Robinson** entered with the class of '37, interested in designing clothes. At the end of her third year she was the one in her class chosen by I. Miller to design shoes for them. She worked with them for a year but returned to school feeling that fashion illustrating was more what she wanted to do. Margaret confesses that her passion for collecting almost anything will probably force her to move out of her own home. » » **Herbert Rosenberg** started out as "Junior," and to most of Cooper he is still Junior. He gave up painting after two years and has spent the remaining time pursuing commercial work and later incorporated photography into his pursuits. In his spare moments he fences, shags, and takes candid camera shots. He has also held various offices first as a Pioneer man, later as two-time President of the Freshman Bible.



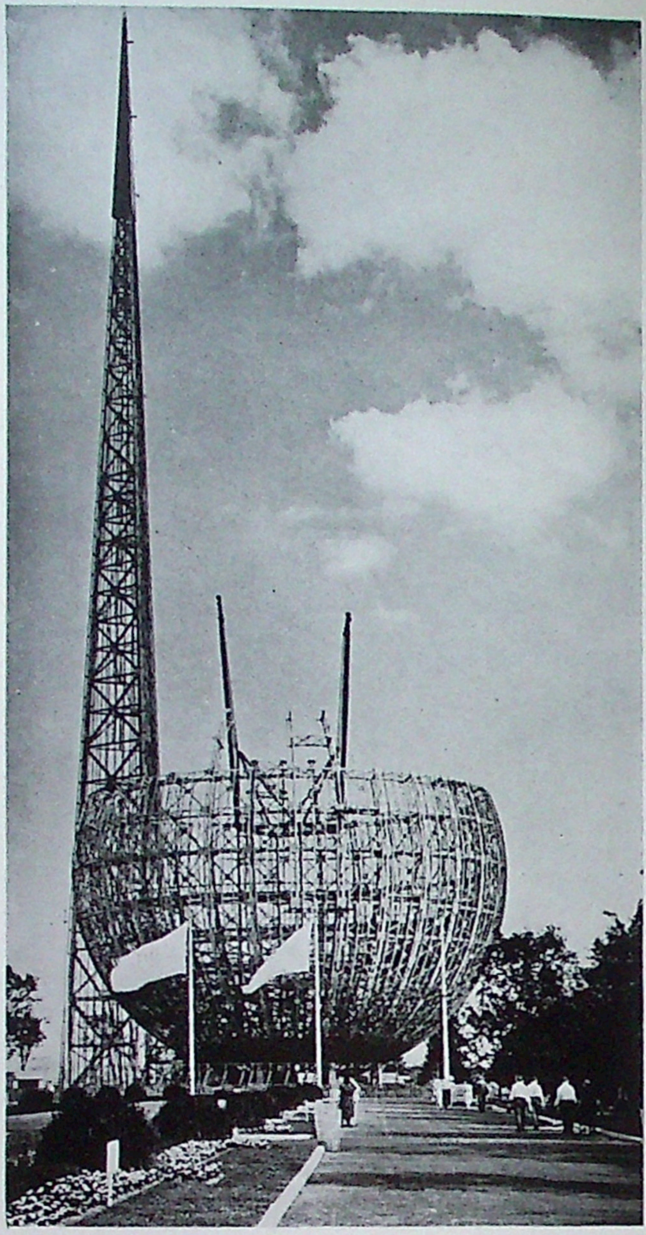
Jerry Sanders must look like the Pioneer or the Pioneer must look like Jerry, for he began at the bottom of the Pioneer four years ago and held every post climaxing this year as Editor-in-chief; the first Day Art member to achieve that coveted goal. He's a Lambda Tau, a member of the Cable Staff and a member of the Annual Dance Committee. Yet he has time to collect books, for he hopes to be a Typographical Designer. His excellent advertising shows the influence of fine printers with whom he has worked. » » **J. Joseph Simonelli** was straddling a fence between painting and sculpture for two years. Finally he found himself and began a serious study of painting, applying the knowledge gained through the art into advertising design. As a result his advertising work is well-regarded. Photography is his hobby; to be a designer is his goal; and we're taking his word for it when he says "blondes are his entertainment preferred." Joey also enjoys writing essays—a few of which have appeared in the Pioneer. » » **Jon H. Stengren** takes painting and designing seriously—one as a hobby, the other as a means of livelihood. He has taken only enough time off to sing in the Glee Club, work on the Pioneer, assist the Blanket Fee Committee, and entertain at the Junior Class Carnival. His ambition is to be a free-lance designer. The theatre offers the relaxation he requires on these occasions when he isn't working at the "studio"; the studio of the well-known photographer, Margaret Bourke-White. » » **Peggy Tilley** was once a true Connecticut Yankee. Slowly but surely her New England conservativeness was replaced by the typical Bohemian air until today she thinks nothing of strolling around New York in plastered overalls. Sculpture is her life blood and eventually her ambition is to apply the knowledge she has gained in sculpture to glass designing. Peg has a second ambition—to go to Sweden, and after that, to live in a quiet cottage in the country with her merry fiddler.



Vincent E. Valentine sang his way around Cooper. Without him, the quartet would have been a trio. He modestly says he is very versatile in talent. He prefers music and the ballet as entertainment until he satisfies his ambition to make a million. When he does, he is going to celebrate —really. In the meantime he'll just stick to his hobbies—boating and sea-diving. (Perhaps Vince has a map of a treasure buried somewhere on the ocean floor—a million dollars worth.) Last summer he went down 30 feet in a home-made helmet. » » Completing the class list is **Catherine Wythe.** She is the remaining sculptor who keeps the merry class in good humor with her drawings of funny animals and witty ditties. She is President of the Senior Class. Her sculpture is full of feeling; as a Sophomore she won honorable mention in painting. A remarkable memory and a keen sense of humor are two valuable assets of Catherine's. The former quality may be attributed to the fact that "a word to the Wythe is sufficient." » » **Gordon Emmanuel White** is a Night Art School student. He is keenly interested in advertising art because of his special talent of developing ideas along mechanical lines. His main interest is patenting inventions; so he says. By day, Gordon works as a designer, and the evening finds him in Cooper Union where in his fourth year, he is President of his class. His hobbies are boating and swimming. To make a name for himself in the advertising world is his ambition. » » **Francis A. Sladovich** was born in West Side New York and obtained his education in Guttenberg. He enrolled at the A. J. Demarest High School in Hoboken and followed this by studying art at Palisade, New Jersey. To further his education he entered the Cooper Union Night Art School. At present he is employed in a retail establishment and is aiming for the field of commercial art. Frank is Treasurer of his class.



The "Noble Roman" (as Mr. Shaw puts it) **Seb Carmellino** produces vigorous and original designs. Admittedly at his best doing ecclesiastical work, his nature belies this trend. Like a true disciple of Il Duce, bellicosity is his forte. Sebbie shows more enthusiasm when in company with spaghetti and wine than with the fairer sex. He hopes to get a degree in Architecture at N.Y.U. and later become a registered Architect. » » **Theo Firstenberg** is the best liked fellow in his class. His quiet good nature and ability to master his subjects have earned him our affectionate regard and admiration. His pre-eminent common sense has often kept us within bounds. Teddy is a graduate of Hebrew Tech, and strange as it seems is the only one who does not have intentions of becoming an Architect. His proclivity for literature leads him to read all the best books. » » Our effervescent exponent of exemplary expenditure of effort, **Harold Schaller,** is the master of the class. His long experience as a renderer and designer of memorials stands him in good stead in interpreting our problems. A consistent prize winner, he has won the George E. Hoe prize in Architecture at Mechanics Institute and first prize in Architectural Design in the third year at Cooper Union. Harold is an avid researcher of the best work of the day and this propensity is reflected in all his designs. » » The flashy compatriot from Harlem, **Joe Trapani,** is terribly modest, never wearying of relating the rigors of his climb to the top, à la "Horatio Alger." Coming from Stuyvesant High and C.C.N.Y., his energy at the drawing board is exceeded only by his truculent panegyrics —nihilism, integralism, fascism, or whatever he knows nothing about. Apart from this, though Balsamo and the Giants flopped, Joe is a dependable guy. He has won prizes at the end-term exhibits including a medal for Architectural Design in the third year.



THUS the 79th Commencement has come and gone and with it goes this latest group of Cooper grads. What is their fate as they step out on their own? With a common fund of knowledge, yet each with his individual personality, to what ends of the Earth will their callings take them?

Fired with the ambition of youth, imbued with the courage and spirit of the founder, no obstacle should impede their progress. Leaving Cooper Union in the face of a business recession, they are almost certain to encounter numerous setbacks and disappointments in their quest for economic security. Every ounce of their determination and fortitude will be called upon to meet and overcome these seemingly unsurmountable barriers. But triumph is bound to come sooner or later and when it does it will be all the sweeter for its evasiveness.

And so, with well earned pride and with the utmost confidence, these hundred young men and women embark on a new journey. The Cable wishes to extend to these graduates its sincerest felicitations and to join their student and faculty friends in saying "Bon Voyage."

GRADUATION

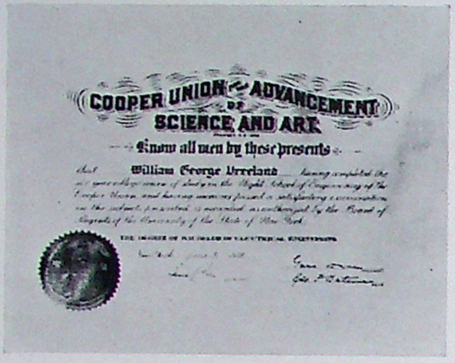
A WARM night was in the offing, but thanks to the genius of a Truly Great Man, it was cool down below the streets of New York in the Great Hall of The Cooper Union. Scores of men, women and children, dressed in their best finery, were assembling in the Historic Hall for it was Commencement Night and Proud Parent and Fine Friend had come to see Their Graduate.

A great deal of noise and excitement seemed prevalent in Room 23, for it was here that the Engineers were assembling. Ghost-like creatures in black gowns and mortor board caps, in various stages of dress and undress, were all about the place. The desperate efforts of the boys to get their caps and gowns on straight gave birth to some of the following typical outbursts: "Look, is this d— thing on right?" "Hey, John, your cap is on the floor." "Has anyone got a safety pin?" "Ouch!"

Professor Roemmle makes an announcement. "Cooper Union Commencements start on time," and then slyly adds, "that is, providing the trustees are all present." We wait a minute or two and finally the word to proceed arrives. As grave Seniors, clad in our grim black togas, we arise and file slowly out of Room 23. From here we trip lightly (?) down the iron shod steps and flit with flying togas, some flapping their sleeves like so many huge bats, along the ground floor corridor and down the crooked steps to the rear of the Great Hall. About this time too we noticed the inhabitants of the Art Schools clad in their maroon caps and gowns like so many heathen devils. Of course, even the engineers admitted some of the "devils" didn't look so bad in their odd costumes. Then the first notes of the solemn processional rang out and we paraded slowly down the converging aisles, keeping a respectable distance from the "togas" of our mates. At the conclusion of the march all eyes were upon President Gano Dunn and as he seated himself the graduates sat as a unit.

While "Bob" Hammond was sketching some of the modern miracles of science and especially when he spoke of the labor-saving "electric eye," we noticed J. P. Morgan chuckling. The great financier was beyond doubt amused. Bob's speech concerned the future trend of events in the field of engineering. He began with the desirability of predicting future conditions saying, "A study of invention offers a good clue to future social conditions and problems of a nation."

The great changes caused by the development of the automobile and the telephone in the last fifty years were presented and then Hammond continued with, "At the present time, we are not at the beginning of a calendar century but we may very well be at the beginning of a new era of development. It is possible that the next few years may see the start of another set of great industries such as those already mentioned."



COOPER UNION for the ADVANCEMENT OF SCIENCE AND ART

Know all men by these presents

William George Vreeland

The employment of the electron tube and the development of visual broadcasting were cited as probable sources of activity which present graduates might find themselves associated with. "These and a myriad of other inventions are now in the process of origination and justify a technological planning program designed to avoid destructive changes and to carry out constructive programs. Such a plan requires statesmen who comprehend these technological advances and their social implications." Hammond went on to say that the engineering graduate of today was in an excellent position to help the government in this respect. He concluded with, "While individually we may contribute only a small amount, in the aggregate we cannot estimate the service which the Engineer may render to Humanity."

Then came Camille Gabrielle Marten, charming representative of the Art School, who "threw" her speech at us—gaily, enthusiastically and youthfully. Her sparkling eyes and shining teeth and free manner and ringing voice, her references to "You Engineers and your slide rules—S sub A plus S sub B equals—" brought forth rounds of applause from the audience led by John Pierpont Morgan, who forgot for a minute, his age, his wealth and his worldly worries in gazing at the young girl who stood before him, alive and sparkling with the health of youth. It was amid thundering applause that our young artiste tripped lightly down the steps and back to her seat. So unusual was the presentation that President Dunn complimented Mr. Purves.

After the usual formalities, Camille began her address by painting some verbal scenes of these four years. The first was the entrance examination, then followed the exciting scene of the first day. "There were the classrooms, studios, the museum, the libraries, and the historic elevator which lifted us from the depths to the heights of art—the sixth floor!"

She spoke of Commencement as the masterpiece. "For four years we have been preparing to begin, to set out on this adventure of life with the weapons which are a part of us—you engineers, with your slide rule, for four years you have delighted in brandishing those mysterious symbols before us, and we artists, with a brush or a scalpel."

A brief explanation followed on what is art, why the artist. She pointed out that the engineer is as much of an artist when he expresses himself in a concrete road or a tunnel or a bridge. "The sculptor who has created a statue lovingly molds it with his fingers, but at Open House the other evening, I saw an engineer caressing with the same pride and joy, a dynamo."

In conclusion, Miss Marten expressed special gratitude to the trustees of Cooper Union, for their share in having made possible this education. She thanked the instructors for their help through the trying years. With a touch of sadness, the last chapter of her address was a farewell to Mr. Purves which concluded with, "With the greatest sincerity, we, the graduating class of 1938, wish you success in each new enterprise, but with heavy heart, we bid you 'Farewell.' "

"Civilization is engaged not in its own destruction but in its own improvement," Barklie Henry, a trustee of the Cooper Union said in his address to the graduates.

"If education teaches anything," he said, "it must teach that the horizon of our knowledge circumscribes an area which, compared with ignorance, is as the point of a pin in the trunk of a giant redwood.

"When a man recognizes the extent of human ignorance, when he believes that we are but children standing on the shore of a strange and wonderful sea, he will not suffer from skepticism so much as from exasperation that life is so short; nor from lack of faith, but from humility at his own insignificance; nor from bitterness that men are not more unselfish; he will wonder, rather, that the human race has come so far in the very few days since its creation."

Mr. Henry grouped Abraham Lincoln, Charles Darwin and Peter Cooper as men who had extraordinary awareness of "man's infinite ignorance." He pointed out that they were all born on February 12, Darwin and Lincoln in the same year and Peter Cooper, eighteen years earlier.

Graduate speakers:

Robert J. Hammond
Camille G. Marten
William G. Vreeland

"The whole tenor of the letter accompanying the deed by which Peter Cooper founded Cooper Union rings with a solid faith and a humble recognition of man's small wisdom," Mr. Henry continued. "Abraham Lincoln, sorely tried by his friends as well as by his enemies, never seems to have cherished a bitterness nor a hatred in his life. Charles Darwin had no time to worry about skepticism; he was too busy driving that great mind in a sick body to get its work done before it was too late."

Finally came the address of William Vreeland during which Dean Bateman appeared as a picture of interest for it was under his guidance that the six year night courses in engineering about which Vreeland spoke, came into realization.

"Cooper Union first opened its doors in November 1859 as the first American night school in which scientific and technological courses, coordinated as to subjects and years, were ever attempted," Vreeland began. Maintaining that, "to adequately estimate the value of such an institution of learning we must not only be aware of the background of its conception, but we must also be able to form a picture of the status of learning in the civilized world at the time of its inception," he then proceeded to outline the advances in physical science during the hundred years previous to the time Cooper Union was established. He continued with the early history of the school.

Turning the century and getting to more recent times, the story of the erection of the Hewitt Memorial Building and its background was disclosed by Mr. Vreeland. In explaining the advent of the present six year night course in engineering, he reminded us that, "those who employed the graduates of the old five year course had commended it in its ability to train young men for industry." It was to meet outside requirements and to plan a course leading to such a degree that much faculty discussion ensued. The job of organizing the new courses and of obtaining its acceptance went to our present Dean Bateman.

Speaking directly to his fellow graduates in the new course Bill reminded them that "we have an unusual and particular responsibility, as we go on in our profession, to make the value of this six year course apparent to those with whom we came in contact. Insofar as we reflect credit on the Cooper Union, we are partially repaying this great institution for what it has given us."

It was about then, that we became aware that our mortar boards were gradually slipping down our necks and just as we began adjusting them, the clear emphatic voice of Professor Merritt announced "Graduates of the Institute of Technology" and we fairly sprang from our seats en masse. One by one we filed up the steep steps across the platform and shook the firm hand of J. P. Morgan, then down the steps and back to our seats carrying the coveted medal and diploma. When all the prizes had been awarded we marched out to meet the world to the gay tune of "Off to Work We Go."

PROGRAM

GREAT HALL of COOPER UNION

8:00 p.m.

MUSIC—"Marche Militaire" . . . . Schubert
PRAYER by . . . . Rev. Elmore M. McKee
SALUTATORY ADDRESS . . . . . . Robert James Hammond
Graduate of the Institute of Technology
MUSIC—"Farandole, from L'Arlesienne" . . . . . . Bizet
ADDRESS by . . . . Camille Gabrielle Marten
Graduate of the Day Art School
MUSIC—"Sehnsucht" . . . . Tschaikowsky
ADDRESS by . . . . Barklie Henry, Esq.
MUSIC—"Molly on the Shore" . . . . Grainger
VALEDICTORY ADDRESS . . . . . William George Vreeland
Graduate of the Night School of Engineering
MUSIC—"Fledermaus Waltz" . . . . Johann Strauss
Presentation of Post Graduate Degrees, and of Degrees and Diplomas
to the Graduating Classes, by the President,
Gano Dunn, Esq. and J. Pierpont Morgan.

The Engineer

AMONG the almost innumerable exhibits of the New York World's Fair of 1939 will be a screen representation of man's progress in transportation methods along with a dramatic glimpse of those of the future. Approximately 1000 persons at a time may watch the presentation which leads up to an impressive rocket demonstration portraying a flight to a near-by planetary neighbor.

A visitor to the exhibit, entering an oval section of the building, will see a great map of the world, 120 feet wide and 40 feet high. On each side of the map, which will also serve as a motion picture screen, will be a large compressor, much like an automobile piston. In front of this map will be an intricate and working model of a rocket port of the future, and above, a skylike ceiling.

As the presentation begins, lights will dim, and the two compressors will start in motion, slowly at first, and accompanied by a subdued beat or throb, which continues with steadily increasing speed and volume throughout the portrayal. First across the 120 foot width of the map, hundreds of bare and sandal-clad feet are seen, marching impressively with the sound of their foot falls intermingled with that of the compressors. Here is the most primitive transportation—along the footpath. A few seconds pass and jeweled lights draw a short line on the map showing how far our early ancestors could travel in a week on foot.

The picture shifts and the next episode comes on. Galley ships with bellowing sails surge across the map-screen. The roar of the sea is heard and after an interval the lights again show the distance the early history adventurer could traverse in his frail ocean craft.

Artist and Architect

The screen portrays later developments, the graphic line grows in length, the beat of the compressors quickens again and again as man is shown discovering the transport possibilities of the camel, the wooden wheel, the chariot, and the viking sail ship. This ends the first period of transportation with man capable of traveling 350 miles in a week.

The middle period appears and progresses through the covered wagon, the stage coach, pony express and clipper ship eras, jumping the distances to 1500 miles in a week.

In the final or mechanical period, progress speeds up tremendously with the automobile, the steam and electric train, the modern steamship leading to the zeppelin and finally to the modern airplane. With this period the jeweled lights extend across the entire world map indicating that man may now go around the globe in a week.

The rocket ship demonstration follows and concludes the activated exhibit. Illumination effects in the large oval room are shifted so that only glowing planets in the sky-like ceiling and the interplanetary rocket port below are visible. Thus, the stage is set for the transportation of the future, when the earth's fetters are completely cast aside and man may wander almost at will throughout the near portions of the universe and visit a planet in a week.

Twinkling signal lights, humming gigantic motors and the song of warning sirens indicate that the rocket ship is taking on passengers for Mars or another nearby sky neighbor.

Futuristic liners unload at nearby docks, trains grind to a stop, taxis and automobiles whisk voyagers to the spot and high-speed elevators rise and fall as the rocket ship is serviced for its approaching trip.

At last the breath-taking moment of departure arrives. Lights blink frantically and warning signals increase their tempo; the whir of motors reaches a dominating pitch and finally a great, steel crane moves. A magnet gently picks up the rocket ship and as the breech of the rocket gun opens, deposits the vehicle of the skyways and its passengers into the rocket gun.

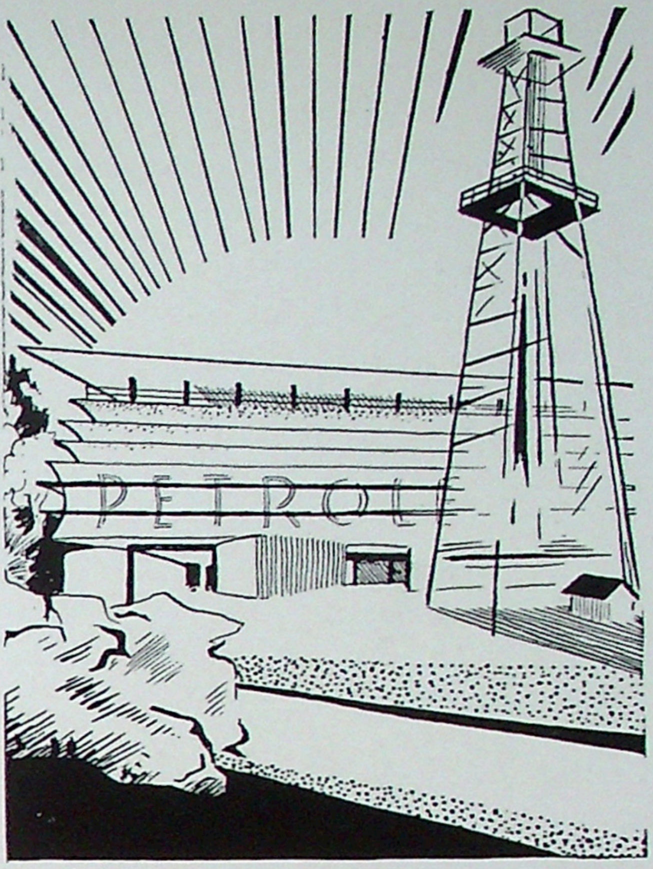
A moment of silence follows, then a brilliant flash, a muffled explosion —and the rocket ship is seen winging its way into space. Over head, because of an invention resembling the iris diaphragm of a camera, persons in the audience seem to see the rocket ship disappearing into the vast depths of space.

At the conclusion of the rocket exhibit visitors may then view an impressive collection of models of vehicles of the future. Among these will be seen an automobile with a much smaller motor and much more passenger space than that of the present, a taxicab with a short wheel base and only three wheels will aid in solving increasing traffic problems, the motor bus with sleeping compartments, the ocean liner fully enclosed so as to be weatherproof and storm-proof, all adding to the convenience of travellers of the future.

Visitors to the fair may visit literally hundreds of other exhibits, many allied with transportation. Some of these, like the one described, will be animated and life-like. Many of them will be devoted to scientific angles of the transportation industry, revealing the processes which are used in improvement of means of transportation.

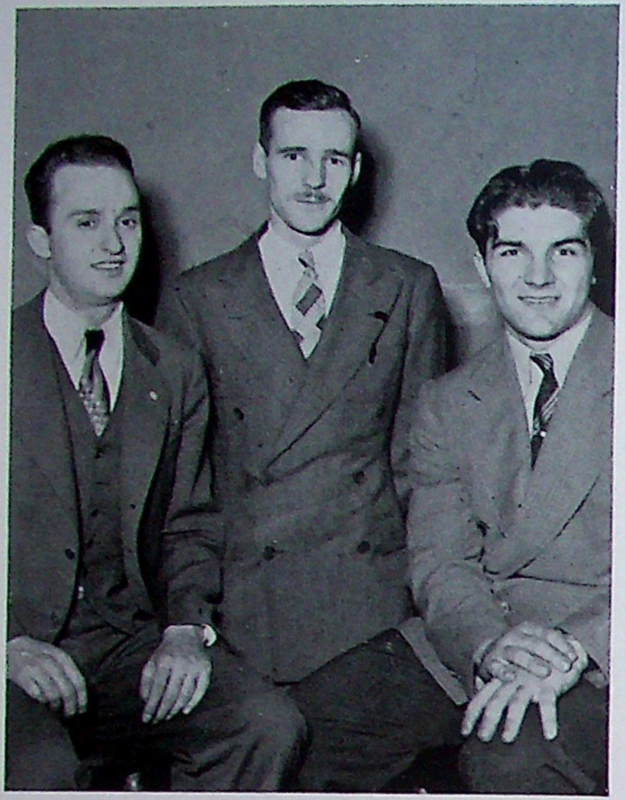
Another feature of the Fair which is expected to be quite sensational is the so-called "magic carpets." These in true Arabian Nights style, will whisk visitors through space—over cities, ships, farms, and forests. These "magic carpets" will be reached by electric stairways—one of which will be the longest ever built in this country, with a length of 120 feet and a vertical rise of 60 feet. The carpets will be used in the presentation of the theme exhibit, which will be seen above, below and all around the spectators. The show—the exact nature of which has not yet been determined—will no doubt be of general public interest.

The coming Fair will be the most interesting and educational collection of exhibits ever available to the public of New York and vicinity. It will contain choice information of every possible description and therefore be of value to all. To students of art, architecture, and engineering it will reveal ultra-modern modes and methods, and in so doing be of especial interest to Cooper Union students.



THE YOUTH OF TODAY SHALL LIVE TO INHERIT, AND INHABIT THE WORLD OF TOMORROW. TO THEM SHALL FALL THE HERITAGE OF THE SCIENCES AND THE ARTS DEVELOPED SINCE THE BEGINNING OF MANKIND. THESE YOUNG PEOPLE MUST USE THEIR HERITAGE WISELY AND WELL. TO DO THIS THEY MUST STUDY AND PRACTISE NOW.

THE CLASSES



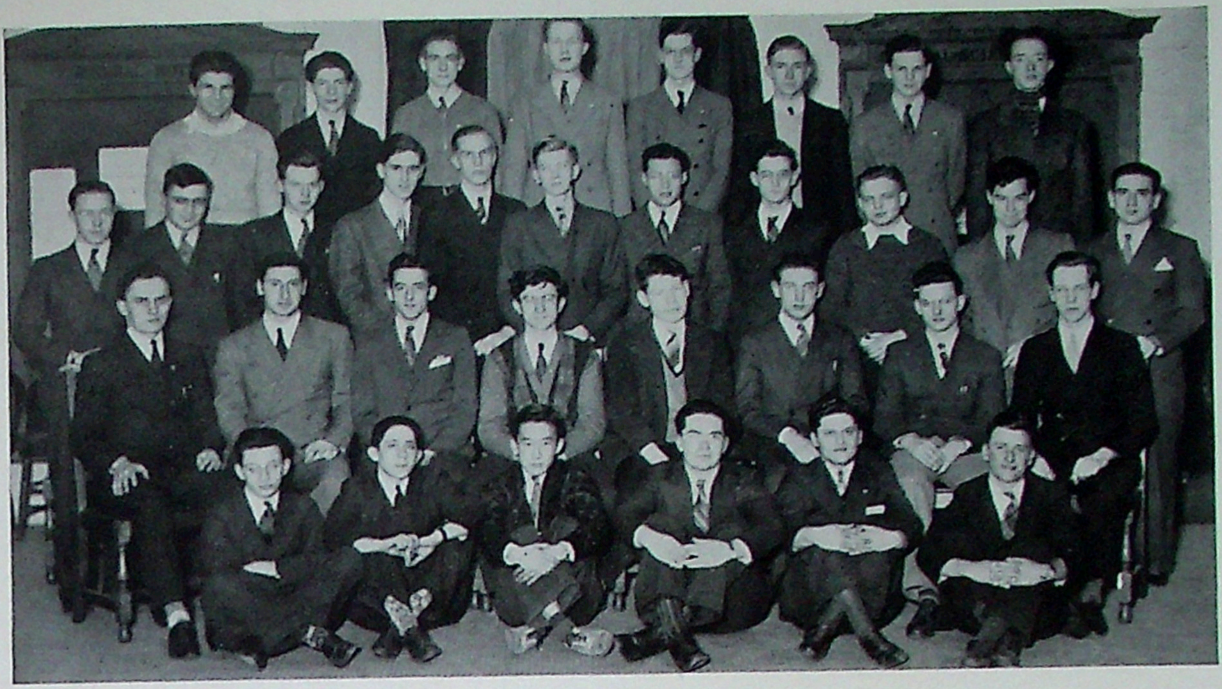
Pres., F. Hauck; Vice-Pres., Kurt Zell; Treas., M. Colletti.

DAY TECH '41

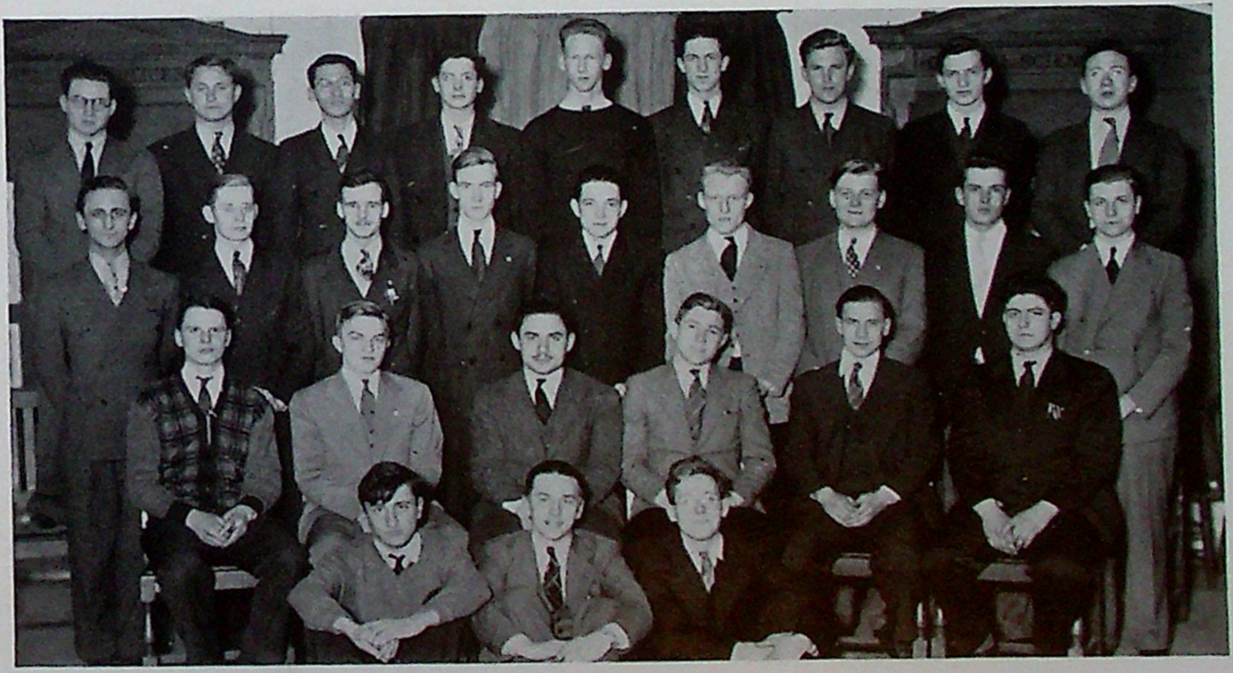
THE Freshman Class of nineteen thirty-seven dashed out of the subways and madly ran to college. Standing before the doors, they gasped with amazement. This was to be their school, with no campus, and with the elevated trains rattling their swaying song above. However, the art students would give it the appearance of a co-ed college.

We came from all parts of the city and from outlying districts, many an appreciable distance away. Each and every one of us faced, with high hopes, the oncoming future; all too soon to be relegated to the past as the subject of fond reminiscences. What a glow of achievement we felt as we left the registration ceremonies behind and proceeded as fully inducted "Tech Men" into the maw of the machine that is Cooper Union. This machine would grind, whirl, and polish us until lo and behold! we would emerge as graduate engineers.

Inevitably, there will be left behind, amid the tangle of gears and wheels, the unlucky few for whom the process was ineffectual and of no avail. Whether we succeed in our first year at Cooper or not, the friendships we formed and the interminable succession of things we tried to learn will enter into and form an integral



Bottom row—L. Stamler, T. Gold, M. Hayashi, Sinelnick, J. Reale, R. Bayuk. Second row—A. Balint, I. Franklin, G. Constantinos, M. Grayman, R. Chilton, V. P. Brower, D. Borczisky, J. Caswell. Third row—A. Bettinger, H. Kaufman, W. Keary, C. Norris, H. Wiitanen, J. Heiman, S. Manson, S. Lippman, J. Danowitz, G. Cohen, G. Tauth. Fourth row—M. Colletti, M. Goldman, J. Papamarcos, O. Dorph, J. Fulleylove, E. Birmingham, O. Zorzo, H. Heller.



Bottom row—M. Maron, R. Ohlsen, F. Kohler. Second row—A. Zdan, W. Motyl, N. Watkins, P. J. Pickett, I. Scheinbart, S. Yeselson. Third row—G. Weiner, H. Kantner, K. Zell, E. Thalmann, D. Schwartz, J. Ungerer, C. Rohrs, J. Michel, S. Jurechko. Fourth row—G. Kantrowitz, H. Nack, J. Rozolis, B. Lewis, J. Walsh, S. Salowey, A. Paluzek, J. Kwasiborski, H. Sachs.

Despite the aprons, Frosh become very holy.

part of a very happy period in our lives.

Despite the absence of the so-called college campus life, we injected into our days some of that frivolity and gaiety which is indispensable to the successful completion of college endeavours. The transition from the "ridiculous to the sublime" was made not infrequently; although calling Analytics, Descriptive Geometry, Physics, and the like "sublime" may be somewhat ridiculous. We have fond remembrances of those individuals who helped to inject humor into our lives: Jake (Fuzzy) Cohen, that mad collectivist who surprised everyone by singing the Marseillaise in German and spouting phrases in Greek; Robert (Buck) Chilton, the punster, who wrote the decimal 0.34343434 and then told the instructor he would "stop where I came in"; Irving Center and General Cohen who proved a great trial to their instructors by flinging chalk and board erasers at each other in the midst of an important oration on the revolution of a cone (not Cohen). Then there was the comedy and lightheartedness of P. J. Pickett, the Ideal Gas-r, commonly known as the Head. P.J. was the only one to fully appreciate the efforts of the Chemistry Department, for on the slightest provocation, he would illustrate the determination of the PV product for an ideal gas under any conditions—usually hectic. Hank Heller, for whom life was one continual foo after another, was also added to the confusion. We often wondered what he came to Cooper for. From the wilds of Plainfield, New Jersey, came Bob (Rube) Bayuk. Every day at lunch hour would find Rube having a good time in the art school. A peculiarity of our class was the prevalence of piano virtuosos. Carl Arnold, Joe Reale, Hank Heller and Van Pelt Brower often tickled the ivories for us at lunch hour.

Obeying the laws of human nature, we banded together and acquired friends. The class met at the beginning of the year to elect class officers. Frank Hauck was elected president of the class with Kurt Zell and Mike Colletti as vice-president and treasurer respectively.

Among the accomplishments of the class may be listed the following. The members of the Freshman Council formulated and successfully completed plans for a Freshman Dance—the first to be held in many a year. Daniel Schwartz, Kurt Zell and Harold Kentnen served on the dance committee and helped to make it the oustanding success it eventually became. Then there were Irving Scheinbart and William

Keary who gained a place on the varsity basketball squad; George Constantinos and John Rozolis, the Greek duo, who rapidly became the mainstays of the Pioneer Sports Editor. Other members applying themselves diligently to their assignments were able to distinguish themselves scholastically; our chief pride being Benjamin Lax who earned the sobriquet "Genius."

Turning now to consider our academic experiences, it may be said that they were a daily revelation. The subjects at first appeared difficult but in a few days we became used to the routine and merrily traversed the halls—seasoned veterans. We watched with open mouths when Professor Ball froze and boiled water at the same time. We listened with apprehension when Professor Coull placed one of his gas law derivations on the blackboard. We enjoyed the Professional Aspects hour both for the relaxation offered and for the helpful lectures given by Dr. Findley. Mr. Summer's subtle humor in describing the process of "scratching a breaker" made us laugh uproariously. Mr. Lehman let us know in his quiet manner when our algebra problems did not "jibe" up. He relieved the sombreness of the period with his gay box tie. With the passing of this tie during the term we seemed to have lost an old friend. A well-liked instructor was Dr. Reid who would patiently explain the expansion of a hole. Professor Miller surprised us when, with no apparent difficulty at all, he would solve an extremely hard problem in a short time with various mathematical shortcuts.

As we look back over the many months behind us, we hope that the future for the rest of the year will pass for us just as pleasantly, for pleasant these months were. We look forward to meeting again next September and extending to each other (should we be successful in our May exams) mutual felicitations. But whether we return or not, the indelible impression made by Cooper Union will remain forever.

Our instructors at the Institute are deserving of many thanks which we gladly give to them, full of appreciation for the help and assistance they so ably gave to us. To the Dean for the kind regard and encouragement he extended to us, we also wish to express our gratitude.

An engineer draws—but with precision.

Pres., A. Dunn; Vice-Pres., S. Sarant; Sec., C. Cichoski; Treas., G. Everson.

DAY SOPH '40

NOTHING is more pleasant to a Cooper Tech student than to leave behind that dreadful feeling of being a Freshman. The so-called Sophomore not only laughed at the simplicity of Descriptive Geometry, Analytic Geometry, Algebra, and Physics, but also thought that each and every Engineering Drawing plate should have been done in less than three hours. However, the clever feeling that he had after successfully navigating those first year exams soon disappeared under the onslaught of Prof. Ball, Mr. Hope, Mr. Tallman and Dr. Mantz. In reference to the present courses; Mechanics, Kinematics, Quantitative (via Qualitative), and Geology, he thinks that they must have been taken from a post graduate course by mistake.

The actual work of the term was enlivened by several incidents which tended to throw school work into the background. Although there was a little friction between the Sophomores and the Freshmen, with no oil applied, there was still more between the sections into which the second year class was divided. The main reason for this was the fact that some sections proved to have better men—men who could actually raise mustaches. Of course the word better that instructors use comparing students may be somewhat different from this better, but the M.E.'s didn't think so.

Our achievements are many—far too many to relate briefly. Let it be sufficient to note that one of our own is energetically working by the two-peg method on the proof of Bailey's constant, and that another was clever enough to realize that he was soundly cheated when he bought Bruhn's ten place log tables, since the antilog tables were missing.

Our experiences are those due to the nature of the course, with surveying, which is largely out-of-doors, the leading contributor (many things may be advantageously seen through a transit telescope; for example, an animated curve having no equation). Geology produced a field trip that covered Washington Heights and caused many a frozen ear and toe. Mineralogy Lab which serves to introduce to the C.E.'s the experimental detection of minerals of rocks and the subsequent identification of the rocks, made geology even more attractive. Surveying is the best liked subject, certainly it has the most professional aspect and is one course among three that is truly different from those the other sections are taking.

By way of introduction, our C.E. luminaries are: Arnold Birnbaum of the most puns and best circulating library . . . Paul Bobay, a square jawed, blushing boy from Yonkers . . . Murray Falkin, a good natured fellow who is so fast that he actually has time on his hands . . . George Fox, who hasn't washed his right hand since he shook hands with Rachmaninoff . . . August Fohn Glaser, German authority, tall, extraordinary, and confidant of the German prof . . . Irving Guralnick, "New Yorker" addict number one . . . John Hanft, "Esquire" addict number one HA . . . Horace Linsky, whose first name he must yet live down . . . Steve Pavelka who has Cooper Union's most Ritz Brotherish laugh . . . Frederick Pohle, who never laughs but is the math leader of the second year class . . . Charles Shaffner, all position player on the basketball team . . . Daniel Silverstone, the rose that blushed unseen . . . John Skiba, shortman, big brain, class representative to the A.S.C.E. . . . William Stone, he doesn't think but rather reckons . . . Saul Weitz, the fellow who speaks so loudly that on first being heard, made even the prof jump . . . and, finally, Simon Wintoniak, whose notes are fit to print.

To our faculty members, we are in no little way grateful. Mr. Robbins, our surveying friend, we take pleasure in adding, has been a great friend as well as a fine teacher.

However—let this be confidential—we have one weakness. That is to become heatedly engaged in argument over the fact that there can be only one chief State engineer.

A brief glance of the second year mechanicals reveals: Herman Long, who ably fills a position on Cooper's varsity basketball team (p.s.—he gets along all right) . . . Accino, known as class kibitzer who alternately changes his name from Long to Wilson as either one stars on the basketball or rifle teams respectively . . . Bayuk! Which one? Why Bernard (grey suit) Bayuk of course, and in our own class too. It requires much of that thing called genius to distinguish our Bayuk from his brother known by many as brown suit Bayuk . . . Milton Breitman, intramural sports manager for the Sophs, is capable of playing either a mean game of basketball or water polo. He proved an able leader last year piloting our class into the playoffs for the interclass basketball championship . . . Harold Donnelly, who achieved a prominent position on our class basketball team (he seems to live in the basket) . . . Al Dunn having received the honorable compliment of being elected class president could not stay away from the basketball team or the swimming pool . . . Isadore Gordon is one of the leaders of the mustache club . . . Stark, who hangs around the chess club . . . Shein and Kondrajian, the class's silent men . . . Belikowich who knows a little of six different languages (and a little in all) . . . Elovitz, the man with the bald spot in his mustache . . . Holmes, who, although you would never guess it, has a secret mania for puns and swing music.

The chief difference between this year's sophomore E.E. section and last year's is that this year's section has Joseph Spindler who holds a Schweinburg Scholarship and knows German (apologies to Kurland). The work of the rest of the section was aided materially by the presence of Joe. This applied particularly to Spool (have you heard the story of Zanzibar?) who prefers chess to German but pretends to be learning both. The mania for chess attacked Irving Quart also. The affable hulk, whose laugh has startled many an instructor, not to be confused with Quart, is Julius Port—not that the two could possibly be compared as to total mass. When registering for classes, it is doubtful if any instructor ever failed to make a remark about a "Quart of Port." Paul Kaufman has never yet come early to a morning class unless by accident. The possessor of an adroit analytic mind is Artie Gottfried, so much so, that he tries to beat the law of averages by arranging his pennies when matching them. Matching pennies is an evil about completely discarded by the section but a permanent record remains in the candid camera shots of C. A. Rosan, who unfortunately could not continue his good work because his camera was stolen. I. Berger—probably the smallest fellow in the school—attempts to write articles on the Pioneer and also does some outside work in radio. Alfred Savant, our virtuoso, comes to school now and then to recuperate from his outside labors. His compatriot in music is Szarewicz who occasionally livens things up with his guitar. James Petet is a philanthropist, who feeds the poor by leaving many of his lunches on the train.

As the Ch.E.'s look at it, it certainly feels grand to be a second year Chemical Engineer. No longer does one have to worry about Descriptive Geometry, Engineering Drawing, or English Composition. The only thrill greater than this that we can think of is to be a third year man and no longer have to worry about Mechanics, Inorganic Chemical Technology, Electricity and Magnetism, and the worst of all, Quantitative Lab. Of course, the devastating effects of Mechanics and Electricity and Magnetism are well known to all of the sophomores but the horrors of Quantitative

Vocabulary-thumbers at work in the German class.

Lab will remain a secret to all except those who have the foolhardy courage to take up Chemical Engineering. The best way to show the tragic effects of this course is to study the case of one of our most popular members, J. S. Friedman, of Newbridge, New York. Last year, Jerry always went around with a smile on his face and a joke on his lips. Now he perpetually frowns and talks of nothing but Quantitative Lab all week long. On Monday, he talks about the labor to be performed on Tuesday. On Tuesday, he rarely talks, and the little he does say would not get past the censors. Finally, on Wednesday, he explains to whomever will listen the numerous reasons why his results of yesterday were not as good as they could have been. All of us are in the same boat with him, but most of us have found a way to forget our worries. For instance, George Kline spends his spare time on amateur photography. Charlie Goldstein has taken up fencing. Seymour Adler reads the "Times" every morning. He seems to derive a morbid pleasure in reading that the Chinese, Ethiopians, and Spaniards are facing worse hardships than he is. Ray Costa still finds time for music and at one time even tried to organize a band or an orchestra or something else which could make some noise. Those two experienced travelers, who journey daily to the big city from the wilds of New Jersey, Alderman and Bourma, continue to argue the relative merits of Rutherford and Passaic, while a fellow Jerseyite, Adams, tries in vain to squeeze in a word in praise of Jersey City. Irv Machlin has become so desperate that he has taken to writing for the "Pioneer." However, the one who deserves the least pity is Phil Horsting who spends his idle moments in trying to inveigle his fellow sufferers into spending their money on such unworthy things as the American Institute of Chemical Engineers and the Mathematics Club.

As the term draws to a close, we sophs feel that we have actually begun to get accustomed to Cooper Union. We believe that we are almost full-fledged engineers now, for the next two years will be easy. We had the same belief at the beginning of this year, but that was a long time ago. After all, we will be Juniors soon—that is, those of us who are not halted in our mad rush onward to the goal of all true Cooperunionites—an engineering degree and job and at least 8 hours sleep each night.

Mr. Tarr instructs both of these sections. Personally, we would prefer to be in the upper right hand group. In his hands is an overgrown molecule.

Pres., T. Berlin; Vice-Pres., H. Kutzelman; Sec., S. Robbins; Treas., R. Salmon.

DAY JUNIOR '39

AFTER a practically complete victory over the sophomore subjects, the Civil Engineers of '39 (just to prove their versatility) spent their vacations in varied pursuits. Ed. Caligiuri employed his engineering training in the highly technical field of precision ribbon cutting. Our hunting friend from the Pelham Bay frontier, who incidentally has recently perfected a technique for shooting palsied ducks, spent two whole weeks jerking fizz-water in a tonsil lubritorium. As a sideline, this modern Fagin entertained a cute little fraulein with his interpretation of the Mantizian Folklore. Pete Sagonis, the only fellow in school who has never been early for a first hour class, has a valuable photographic record of his hitch hiking tour of Dixie. The pictures show quite clearly that the southland still retains some of its traditional spirit of hospitality. George P. Rolly, Inc., carnival slicker, might have been seen at a popular Rockaway amusement center wheedling hard-earned dollars from the poor innocents who came within earshot of his sucker bait.

The inevitable return to Cooper found the boys full of confidence and quite ignorant of the horrible tortures which a cruel fate had prepared for them. Little did they know that they would soon be knocked bowlegged by non-closing stress diagrams, or be scalded by an endless stream of red hot BTU's from the dark and mysterious realms of so-called Elementary Thermodynamics.

The powers of darkness, the utter futility of resistance fled in confusion before the onslaught of the C. E. Slide Rule Brigade led by Bonnie Boy Keith of clan Halliday.

Rumor has it that the Junior Basketball team operates on the principle that two bodies cannot occupy the same space at the same time. Thus if Max Strauss's mass is interposed between the goal and an opponent, said opponent cannot approach said goal, Q.E.D. "Billy Boy" Strauss, politician extraordinary, is president of the A.A. and is usually followed closely by his able understudy Sol Tannenbaum who is a great help around the Pioneer office.

Several unscheduled group inspection trips were made during the course of the year in connection with school work. A very interesting visit was made to the Hayden Planetarium where the boys had a chance to test the knowledge they had acquired in their Astronomy course. Another tour was made (quite hurriedly) to the modern Municipal Sewage Disposal Plant on Ward's Island while it was in operation.

On a bright September morn, in the year 1937, about half a score of gay and sprightly young men bent upon becoming Electrical Engineers popped up for Registration. The class found out that heat power was a nice place to catch up on one's sleep. However, this heavenly oasis proved only to be a mirage when Mr. Vopat began handing out problems that had to be hand-engraved on gilt edged paper with sliderule work accurate to five figures.

A.C. circuits proved to be one series of whirling vector pinwheels after another. Everyone was beginning to congratulate himself upon being able to solve single phase problems in alternating currents when along came polyphase circuits with the old unbalanced 1-2-3 punch. At the end of the first semester the Junior E.E.'s found six exams facing them with 0.000 days intervening between the last exam and the next semester. It was rumored that one fellow actually went to see a movie, and Saui Aronow managed to take Friday evenings off and work on the Pioneer. Such things were kept quiet, however, for fear that if the authorities heard of such time wasting, the homework assignments would be doubled.

As proof of the E.E.'s endurance, some of them even visited the other schools of Cooper Union. When Barney Olcott could not be found, all the teacher had to do was to go up to the Art School and haul him out of the arms of an alluring female. Then the whole class would have to go up and get the teacher out. If on the way down, they passed a sad-looking figure, mournfully mumbling German grammar under his breath, you may take it for granted that said sad-looking figure was only Ruben Kazarian, who was having a quiz that night. If they tripped over someone sleeping on the stairs, said someone upon being awakened immediately asking if the Library was open, they knew that it was most likely Frederick Bluck, who had come in from the wilds of Jersey so early that morning that he had to drive the Public Service bus.

Nevertheless the E.E.'s were not always asleep. At times they were stimulated by the most scientific of investigations. C. Whitney Holland did not believe that motors can "run away." So he put it to a test. One motor in the Electrical Machines Lab found itself minus its field as part of Mr. Holland's test. One motor then proceeded to gallop full speed gobbling up the r.p.m.'s. Circuit breakers started popping so fast that the worthy investigator did not have time to acquire much data and he will have to repeat the test in the best interests of science. A new method of measuring high voltages was invented by Ray Bendett. It consists of putting a junior engineer between the bus and the ground, and letting him fry for 30.0 minutes. Then measure the total skin area that has turned blue. This area is directly proportional to the voltage. A D.C. line is indicated when the color is of a purplish shade.

Speaking of water, the class had its sea-faring men. Frank Nistico came out of the blue each morning on a ferry from Staten Island. On muggy days he would come to class at half speed blowing his foghorn every two minutes. The excuse did not work with Mr. Perez, who also comes from Staten Island.

Whether riding a ferry to a Power Plant for an inspection trip or carrying on a friendly hissing contest with the C.E.'s, the eight members of the third year M.E. section are always together in school. This spirit was carried out of school to the annual Mechanical Engineering Christmas Dinner on the Thursday before the Yuletide recess. Howie Kutzelman, Charley Caccamo and Ed Lichtenberg arranged the whole affair which went off well despite the floor show presented by the restaurant.

During the year Joe Black revealed the secret of his success. He is what might be called a professional piano player and a darn good one at that. Dan Russ, the section genius, however, does not attribute his high standing to his expert accordion playing . . . What is the secret Danny?

Our Farmer (first name Jack) has the faculty of talking the longest and saying the least with Abe Katz running him a close second. Speaking of plant visits, as we weren't, several extra-curricular afternoons were spent by the section looking over what New York has to offer in this line. One of these was a visit under Professor Roemmle's guidance to the Hudson Avenue Generating station during Christmas week. Others included searches through Robbins Drydock in Brooklyn and the only iron foundry on Manhattan Island checking up on facts learned in Professor Young's Mechanical Processes sessions.

Probable the most remarkable thing about the Mechanical Engineering section is that a full three quarters of it is on the four year plan while Bill Moore is toying with the idea of testing the new faculty rules by inaugurating an eight year plan.

Our playing Junior Chemical Engineers are having a swell time in Organic Lab-

An interesting lecture usually keeps everyone awake.

oratory. Whenever there is a little too much horseplay for the good of the community, there is a small sized explosion followed by a flash of fire. After the smoke clouds have cleared from the laboratory atmosphere, the engineers call the roll to make certain no one is missing. Following this each member of the class makes a personal inspection of his various extremities including nose, ears, fingers, etc. Fortunately none of the members as yet have lost any of their beauty as a result of the detonations.

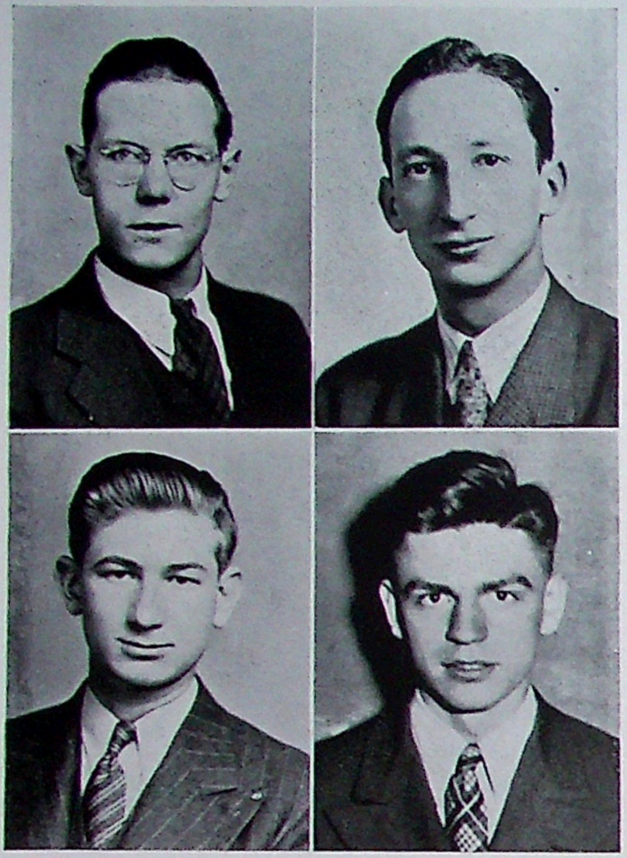
Harry Messinger takes all honors as champion glass buster. One minute you see a condenser; the next minute Harry is picking up pieces of a certain vitreous noncrystalline substance from the floor. His partner, Augie Stegmuller got the bright idea of joining the New York Fire Department as a result of his experiences with fires in the laboratory and he is now a famous flame consumer.

The remarkable partnership of Robbins and Tobias in Organic Lab is worthy of note. Their ability as chemists in the line of synthesis is amazing. Their yields are almost better than one hundred percent. Ask any member of the second section how they do it.

The mathematician of the Class of 1939 is the eminent Teddy Berlin. When nobody else can work a problem, Prof. Reddick will turn and say, "Berlin, what do you think?" This is a sign for general relaxation and while everyone sits back and watches wide-eyed, the one and only Berlin strolls to the board with one step and makes a few magic gestures and in the next second the problem is completed.

When it comes to Electrical Engineering it is easy to see that the Chemical Engineers are taking the right course. In E.E. lab they have every one jittery, blowing circuit breakers when least expected and such. One day, Squad 10 took the load off the series motor they were operating. The thing started to whine. The safety relay cut it out. Mr. Nudd nonchalantly said, "It worked." Squad 10 was lined one in back of the other, behind the nearest large obstacle. Another time, one of our worthy squad tried to use D.C. current in making a study of the A.C. Wattmeter. The experiment was not a success.

Showing the E.E.'s disporting in the Materials Testing Lab—a shot of the M.E.'s actually concentrating in the Kinematics class (can this be a candid shot?)—the C.E.'s appear to be enjoying a computation session in Railroad Surveying.



Pres., J. Falk; Vice-Pres., F. Baird; Sec., P. Scherbner; Treas., J. De Lury.

NIGHT TECH '43

ON August 23, 1937, about 1,500 hopeful scholars noisily marched into the Great Hall of Cooper Union. For most of them, it was the first view of this great institution of higher learning. Some were awed, some were bewildered, a few were even disappointed.

For three solid hours, 1,500 pencils wagged doggedly. At one time or another most of the 1,500 heads present were scratched wonderingly. Then, at ten o'clock, 1,500 fatigued, dazed, ex-scholars, silently marched out of the Great Hall to wait prayerfully for the card which they hoped would say that they had passed the qualifying examination and might present themselves for the three night entrance exam.

One week later 400 sanguine people marched into the Great Hall for the second time. It was the first of a three night siege of questions.

Long months of preparation.

Long hours of stiff examination.

Longer hours of breathless expectation.

Finally 217 men were notified that they had been accepted into the ranks of Cooper Union; that they were given the chance to become engineers. Dazed by this good fortune they gathered in the Great Hall one September evening and heard Dean Bateman officially welcome them into Cooper's ancient precincts.

The first year is approaching its end. We have learned to draw a straight line with a T-square. We can recognize a pierce point when we see one. We know what an ideal gas should be. Our English compositions are now readable.

But this proficiency was not gained without hard work. We have enabled utility companies to declare dividends, and paper companies have increased production.

Bottom row—H. Zall, R. Bleecher, L. Kilian. Second row—J. Brogan, T. Cohen, W. Cleary, G. Corin, A. Chletsos, D. Hedelund. Third row—J. Pavlacka, A. Michaelson, W. Meyn, S. Kwiatkowski, I. Frumkin, A. Botvinick.

Hard study has put lines in our features and gray in our hair. Examinations have battered us from pillar to post.

Unforeseen circumstances have thinned our ranks by two score and ten. New found friends have suddenly not appeared in class. We realize that one may achieve his goal, while his friend may not.

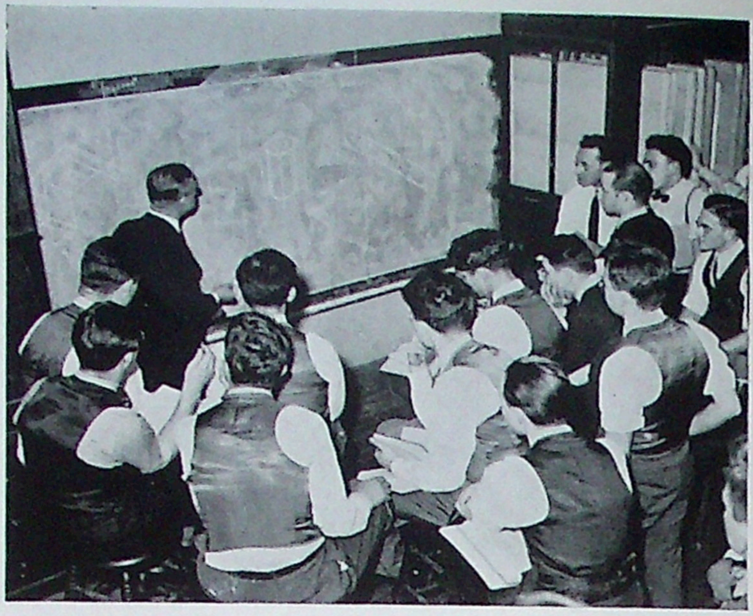
Early in the year the class organized. The sections elected representatives to select class officers. John Falk was chosen president. Frank Baird, Philip Scherbner, and James De Lury became vice-president, secretary and treasurer, respectively. The executive committee of the class was completed by Herman Zall, Henry Levee, and Frank Blyton.

Social activities next attracted our attention. Fraternity rushes and smokers first occupied our time. Then we found the many clubs and teams of the school. However, the first real class activity was the Freshman Preverna1 Dance.

Sponsored by all the first year classes, day and night, Tech and Art, the dance was held at the Hotel Oliver Cromwell, Friday evening, January 21. Door prizes and a balloon blowing contest added to the spirit of cheer and good fellowship. The success of this dance has assured the class of the success of future functions, as this was an experiment to determine the extent of cooperation between the schools.

However, it was not until the Annual that the first year men were able to prove that they could dance to any music, be it a waltz or a flea hop. The gals they brought to these dances would have done justice to any beauty contest.

The class finally found out why Frank Youngblood and Leonard Kuthroff are so



It looks easy when the instructor does it in class.

good in chemistry, they work as chemists during the day.

Night circulation manager Bleecher always handing out copies of the Pioneer—Norman Gardner always talking about his **so** original column—Al Botoinick and his chess playing—George Gawel and his fraternities—Alvin Michaelson with his cousin's lecture notes wondering, about his sudden popularity—The continued undercurrent of discussion in Professor Coull's lecture class—Our attempts at public speaking in Mr. Cumberland's English class—Mr. Tanzola's off-the-record comments in Algebra—All of these and a multitude of other things comprise our first year in Cooper Union.

To illustrate the general freshman opinion of Cooper Union, we quote a typical Cooper night freshman who was heard mumbling his thoughts about the "Union" in the following incoherent style:

"Hmmmm . . . So this is Cooper Union . . . . Well, now starts the long grind . . . . six years of it . . . . Let me see, after all these fees and deposits are paid I will have to start my bank account all over again . . . . The handbook says that we should be in the best possible physical shape . . . . I suppose that is because of the climb up to the seventh floor that I have to climb every day . . . . Maybe when I am a third year man I will only have to climb three flights . . . . Well the first two years are always the hardest . . . .

"Hmmm . . . . Not a bad group of men in the first year class . . . . Some very good material here; draftsmen, electricians, clerks, even a pickle and sauerkraut handler . . . . Some pretty famous characters in this class . . . . Some real men behind these phrases . . . . 'after working the problem some way or other, you get this equation' . . . 'so why' . . . . 'I can do it but I don't understand how I do it' . . . .

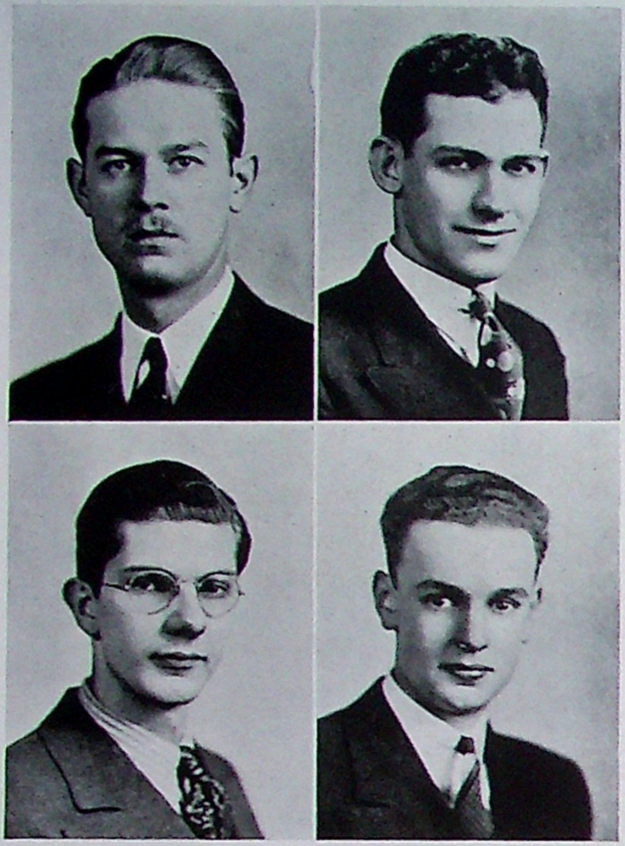
"I wonder when Cooper Union started the course in Foo-ology . . . . Don't see it in the handbook . . . . Seems like every classroom I enter was just left by students of this subject . . . .

"Hmmmm . . . . Cooper Union . . . . Hope I'll stay here a while."

Meanwhile we face an arduous six-year course. We hope to complete the course by careful and diligent study. We sincerely hope that some day we shall bring as much honor to Cooper Union as we are honored by attending.

Bottom row—W. Eberhard, G. Grass, J. Faulk, G. Frank, W. Guth. Second row—H. Kalajian, B. Kaplan, J. Davis, W. Dimm, E. Hake, G. Gerstheimer, G. Erlemann. Third row—W. Fitzpatrick, E. Cutler, J. Fedyna, L. Horowitz.

Bottom row—P. LePantoe, H. Levee, L. Mandelbaum, R. Rabinbauer, P. Nedbolski, H. Alter. Second row—A. Watrous, J. Trier, J. Sweeney, S. Zuckeman, M. Greenberg, D. Young, W. Thompson. Third row—I. Stern, G. Lieske, L. Kuthroff, A. Lorch, D. Giardini.



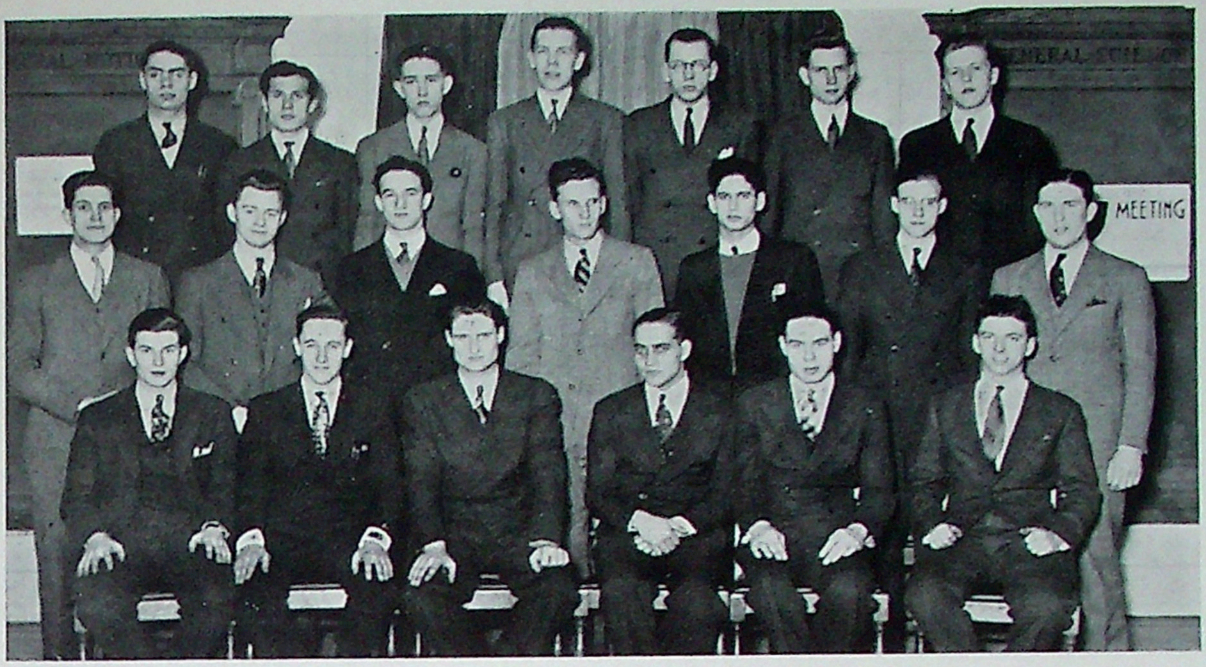
Pres., H. Flar; Vice-Pres., P. Heere; Sec. H., Neidhammer; Treas., Fred Herr.

NIGHT TECH '42

IN September, 1937, about one hundred and fifty finishers in the first year race returned to the starting post for another dose of their medicine. We began our second year feeling quite chipper, after a summer of gaiety and rest. On looking back at the first year, it did not seem so difficult, in fact the second would be easy. But this idea vanished very quickly after the first few weeks that the school was in session.

True that week-ends spent with a drawing-board, five hundred word compositions, and pierce points were left behind, but those horrors were replaced by Van Der Waal, Red Giants, and White Dwarfs, to say nothing of physics laboratory reports. Instead of physics, many of us wondered if we weren't taking a course in historical research, it being necessary to find the origin of the metric system and to look up the history of the spherometer. Thursday evenings seemed to develop as the most enjoyable when Mr. Hope, our chemistry instructor, flooded the Chemistry lecture room with laughing gas. Incidentally, his scientific process as applied to women is a huge success. This can be verified by Robert Roge and Anthony Vescuso who tried it at the school dance club. However, Dr. Valentine, our Physical World instructor, will still give an "A" to anyone calculating the distance from the Milky Way to the earth in centimeters.

Those in the second year realize what a swell fellow Mr. L. L. B. Summers was. What degree does "L.L.B" represent? Without his assistance the depression of freezing points, the theories on osmosis and dialysis, and many other subjects of equal intricacies would have been just so many words to us humble students. Credit should be awarded Professor Ball, the great showman, for his splendid lectures which



Bottom row—K. Neuman, C. Guerci, H. Aglietti, P. Chovanak, R. Barrett, A. Gouzoulis. Second row—J. Lasco, S. Mason, H. Guerci, H. Brickfield, H. Greene, H. Messerschmidt, C. Greene. Third row—L. Salit, J. Goldman, J. Dusch, R. Gildersleeve, C. Fromm, J. Gleitsmann, A. Gerbore.

were presented in a manner that was understood by all.

A few major occasions helped to break the monotony. The Thanksgiving Eve beer party which prevented many from over-stuffing themselves with turkey, and the Class Dinner Dance, at the Hotel Lincoln, where many of us spent most of the evening finding out what the under side of a table looked like, instead of dancing to the delightful music of Isham Jones. This year's beer party was a tremendous success and showed us that Henry Flar, Fred Herr, P. Heere, and Herb Niedhammer, were swell waiters. About the only one at the party with brains was Harold Nagelberg who thought that his glass of beer was a finger bowl. Plenty of fun was had at this party by Bernie Lichtenstein and Stan Wechsler who discovered the masquerade dance upstairs. They entered as engineers which was disguise enough. While one of the waiters entertained with his singing, Al Lorenz, Stuart Mason and Donald McNair were under the table trying to figure out why the roof seemed so low.

At the end of last term the students of the second year class elected the officers for this past year. Henry Flar was elected president. As vice-president the students chose Anthony Orsini. Herbert Niedhammer was honored with the post of secretary, and Fred J. Herr was officially made class treasurer. It was through the untiring efforts of these men that the beer party and dinner dance were not only made possible but also successful.

Minor humorous events in and out of class were instrumental in breaking the strain from time to time. In our midst were certain fellows to whom we owe a lot for their jokes and clowning which helped provoke occasional hearty laughs. It

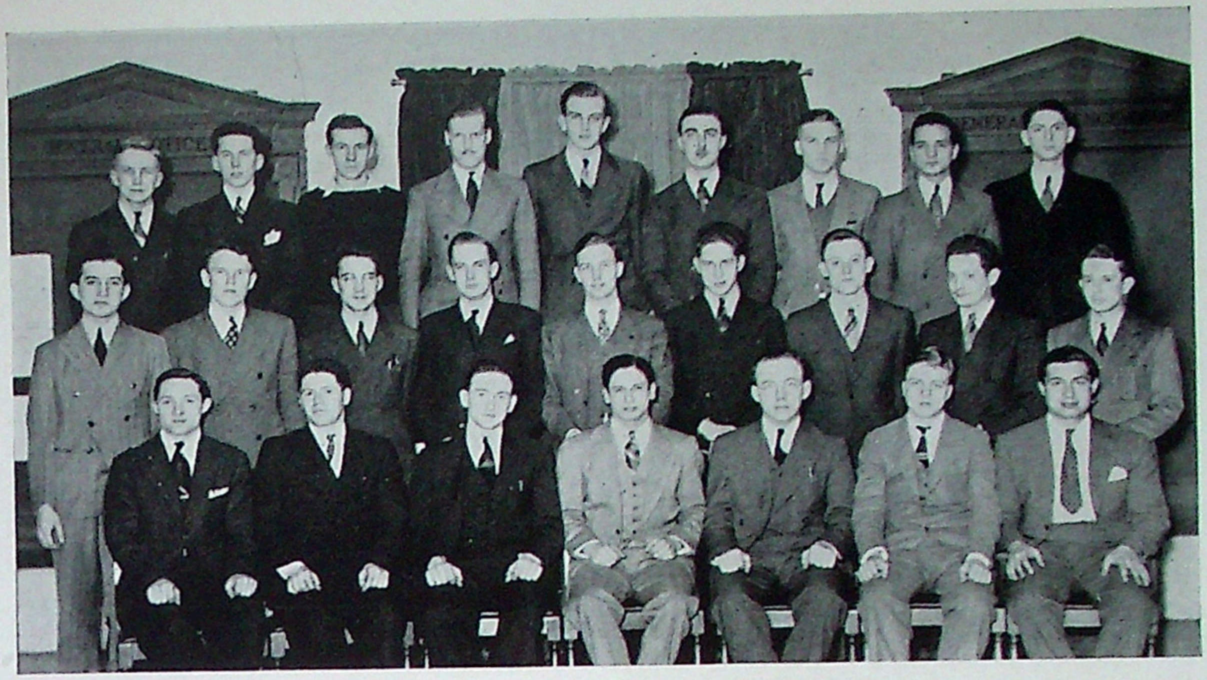
Mass production methods are used in teaching English.

was Imbesi, whose hand was up when the instructor imposed a question on the class, but who was only scratching his head. It was Jugo Alietti, whose simian antics were displayed on receiving his exam marks, which were never quite as high as he had forecast. Much to his disappointment. Diminutive, dynamic Ludlow Horvath, always looked for trouble with the big fellows, when his bodyguard, Gilbert "Stonewall" Heun, was close at hand. Fred J. Herr set the style in neckwear. Al Casper wants to write a book. Carl Guerci, the original fresh air fiend, always wanted the room well ventilated in mid-winter. Horace Greene, the most quiet boy in the school, was a glass-blower by trade. Walter O. Christ was a punster who would have warmed Webster's heart. President Henry Flar always presented his theories with confidence, but in the end always exhibited a rosy hue around the cheeks when shown his mistakes.

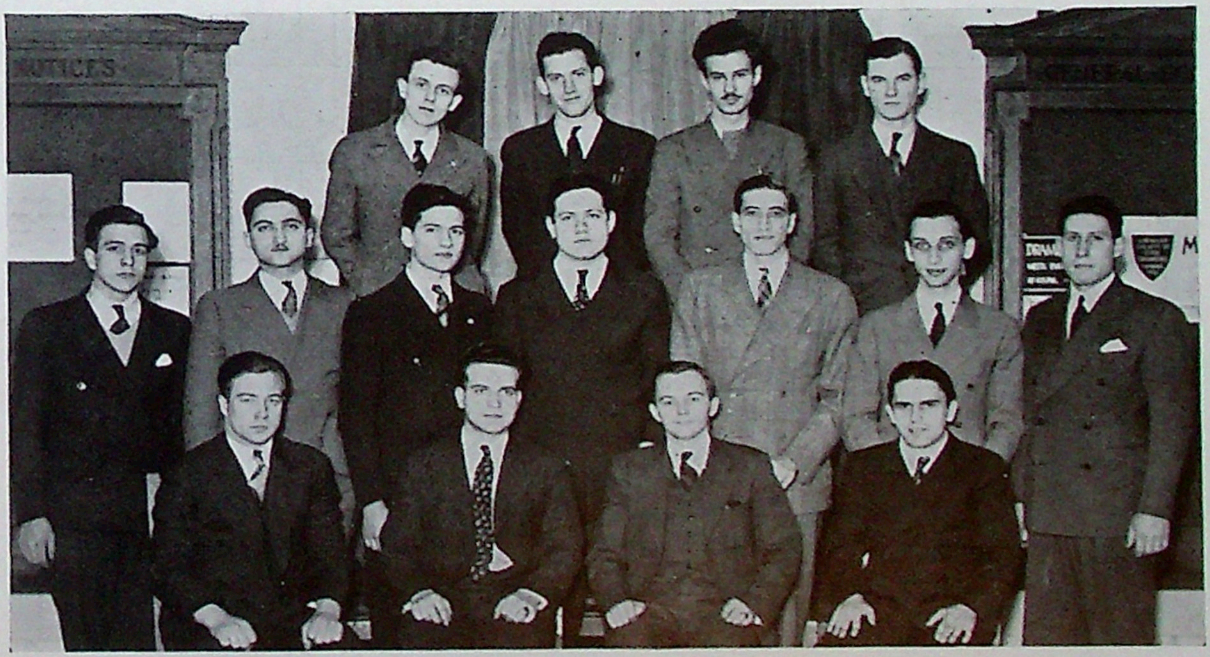
After an instructor goes through a problem with the utmost care, and then winds up with: "Now is that clear?" Harold Guerci, invariably finds a question to ask.

This class is one of the two engineering classes in Cooper Union to be blessed with a member of the fairer sex. She not only is a good sport, but also is one of the top-notch scholars of the class. We refer to the one and only, the inimitable, Margaret Drake. However, no matter how far we go in years to come, we will never forget those surprise quizzes; the last minute rush when note books were due; and the terrific racket that came from the math class next door.

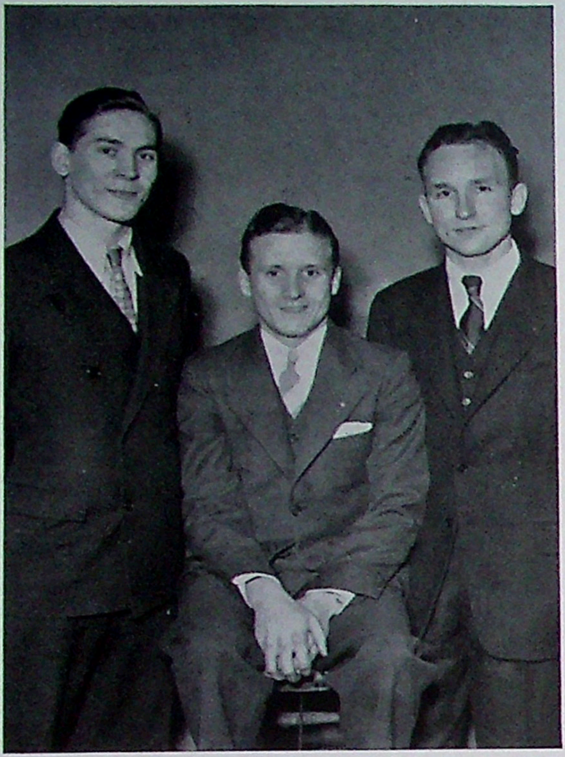
It wasn't till the end of the second year that the students of this class really got to know each other. And now at the end of this semester, we part again to follow our different branches of engineering. However, this will probably tend to organize the class better, as friendship will be spread over the entire class and not concentrated in sections. As we finish this second year race in the six race series, it is discovered that there are only about one hundred and twenty-five students or less left to start the third year race. About seventy-five have either dropped out or have lost ground. However, we do not dread that which the future may have in store for us, and it is assured that in September one hundred and twenty-five workers or less will come back with more energy and stamina than before, trying to maintain a better average.



Bottom row—M Weinstein, M. Sachs, V. Schultz, A. Scheiner, F. Hansen, R. Pink, B. Lichtenstein. Second row—R. Wickman, E. Sielkie, F. Sjogren, J. Shanahan, E. Sichel, B. Radzka, L. Smith, M. Spieslman. Third row—K. Sloan, M. Steinberg, C. Stevens, F. Atwood, J. Gummersoll, A. Laufer, S. Walker, T. Vespuso, S. Rogat.



Bottom row—E. Mathieson, V. Lopez, D. McNair, L. Kwawer. Second row—P. Marra, P. Kushins, A. Orsini, M. Malchenson, R. Osman, I. Last, E. Huchital. Third row—G. Mission, P. Heere, I. Millman, F. Nelson.



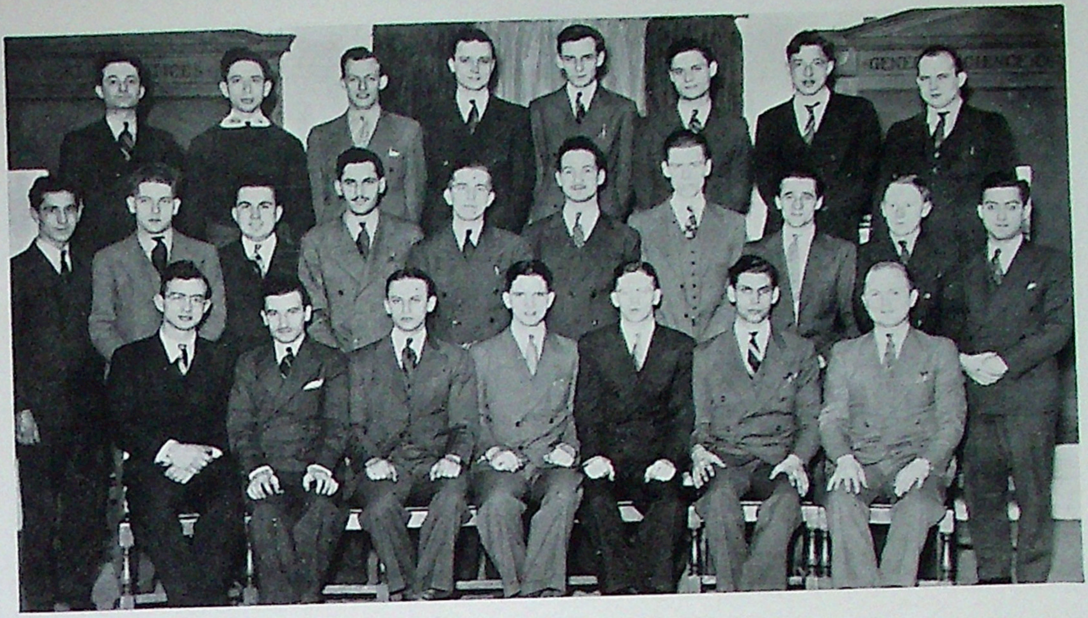
Pres., G. Bartelheim; Vice-Pres., E. Owen; Sec., H. Decker.

NIGHT TECH '41

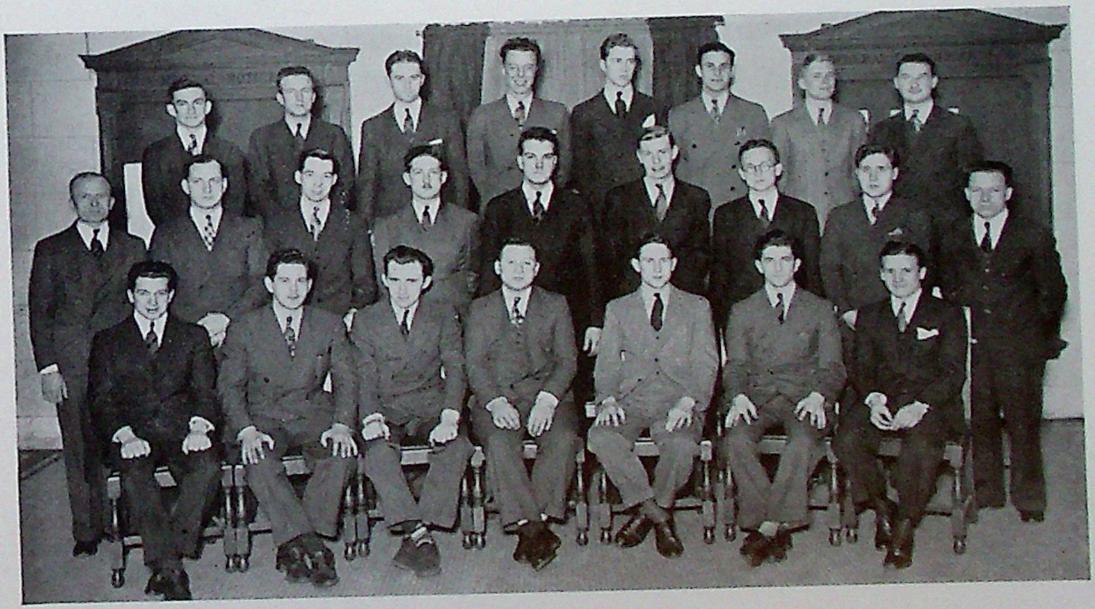
THIS year finds the Third Year men hardened veterans after two years of the oft mentioned grind. After struggling through Engineering Drawing, Algebra, English, Descriptive Geometry, and General Chemistry in the first year, those of us who are left were lucky enough to pass the so-called Elements Courses, and the rest of the second year subjects. We certainly have the right to call ourselves hardened veterans. And now, after encountering the baffling and age-old mysteries of Calculus and wandering through the intricate maze of knowledge contained in the "E & M course" the amount of knowledge absorbed by these knowledge-thirsty young men is amazing. Truly amazing!

Mechanics problems and laboratory reports counted for a large part of our sleepless nights during the beginning of the term. However, as the end of the year approached the writing up of our Elements of Trade lecture notes overshadowed all other work. Of course, by this time our notebooks had assumed staggering proportions and the rings under our eyes had become permanent. Some tell us that there is a brighter side to all this, but as far as we know no one has yet been able to discover it. Some are still looking forward, but most of us have resigned ourselves to fate and to countless hours of school work.

On Tuesday evenings after wading through Mr. Tallman's



Bottom row—A. Kuchinsky, J. Keene, C. Bernstein, M. Wernander, W. Jansen, G. Corin, L. Bachstetter. Second row—G. Vinci, J. Selman, C. Struyk, M. Schwartz, W. O'Keefe, L. Nagolshiner, ..., N. Mullit, J. Gallery, M. Johnson. Third row—E. Yampolski, B. Kroll, M. Weiss, E. Bildziukiewicz, W. Braun, S. Kossaic, S. Lebowitz, J. Spielman.



Bottom row—W. Pescoe, R. Maslow, F. LaTour, J. Fuchs, S. Perlman, J. Bryer, G. Bartelheim. Second row—P. Dunay, J. Channing, D. Miller, ..., W. Pagdin, E. Moller, E. Owen, S. Alessi, F. McGee. Third row—A. Stern, J. Leys. F. White, W. Baumstein, A. DuFlon, S. Bindman, E. Hammerston, B. Shmulevitz.

Sometimes an instructor gives a hard problem.

network problems and Prof. Merritt's force problems the E.E.'s found themselves indulging in a bit of farming and agriculture in Dr. Valentine's lectures on Elements of Trade. Previous to this year the class was warned about the tough going they would encounter in Calculus, and, even with the consistent patience and amiability of Mr. Lehman, these warnings were proved to be true. This course certainly was a "corker." The first encounter with practical applications of electricity took place under the careful guidance of Prof. Ball, Doctor Reid, and Messrs. Koenig and Craig whose kind efforts were greatly appreciated. This course teaches the Third Year Night Men the fundamentals of electricity. It is well liked by all of the men and was quite easy. (Editor's note: No wonder it was well liked.) But in all seriousness this course really gave the men a sense of what was to follow and was found to be very interesting.

In the Third Year, the Ch.E. section got down to work and learned some of the Chemistry that had been denied them for the first two years. Starting with Inorganic Chemical Technology for the first half year, the Chemicals got their first taste of their future miseries. These worthy men then went on to Qualitative Analysis in the second half of their Third Yearly struggle. In this field of their endeavor they were taught the various methods of identifying the various elements. This may sound easy to the laymen, but have they ever been given a solution and been told, "Find all the various components of this solution"? Depending upon the student, and upon the solution, this problem may take anywhere from a week to a month. Of course, those students who are taking Chemical Engineering don't consider this as work, as a matter of fact, this course is considered the most interesting and enjoyable of all the subjects thus far taken. The Ch.E.s really went to town on this subject.

At the beginning of the Third Year, the students who were beginning to know each other after two years of association in the same groups, are redivided according to the branch of engineering which they intend to pursue. Thus, old friendships are often broken and new ones sometimes made. In the Ch.E. sections, more of the latter prevails than the former. A great percentage of the students are Ch.E.s, and therefore most of one's friends can usually be found in the Ch.E. group.

The Order of Exalted Handshakers inaugurated in the first year of our presence at Cooper, and reinforced by certain Physics teachers in the second year, was not disintegrated this third year. Clifford Struyk was unanimously elected Chief Handshaker, and Yampolsky, the curious one, was made Chief Exalted Assistant to the Chief Handshaker.

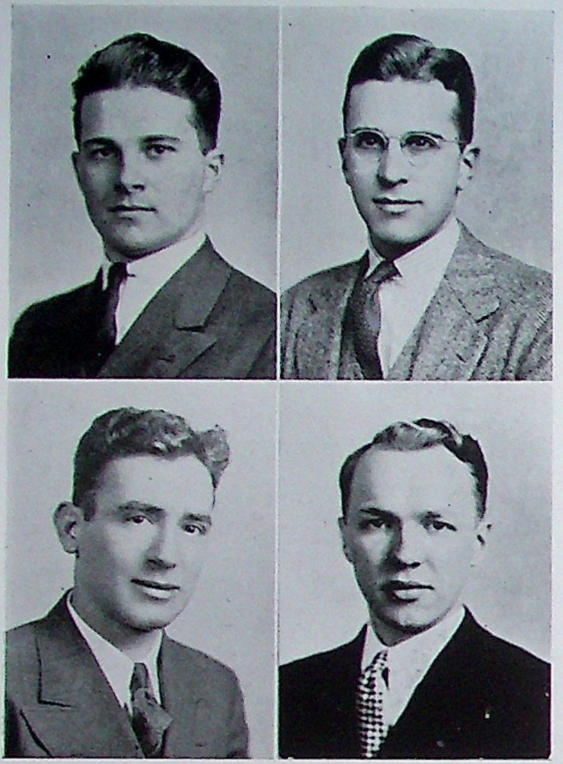
The Order of Teacher Confusers prospered greatly with the mighty Yampolsky at its head and Dead Dan Tucker right beside him. Other minority groups which formed in the section were merged into one great organization, the Pinzka Puzzlers, by that master mathematician and original Recitation-Pepper-Upper deeded to us by the Day School, Charles Pinzka.

Another bequest from the Day School was Baumstein, the Bombastic who did some good work as a Teacher-Confuser, but whose talents were generally devoted to Asking-Questions-About-Problems-Done-A-Long-Time-Before. Baumstein and his cohort Wexler were always consulted by the Instructor when he was not sure his explanation was clear. The Beer Guzzlers Union suffered greatly by the loss of White, but Sullivan, Struyk, and Tucker managed to keep up its reputation.

Nagesheimer and O'Keefe cooperated in heckling delinquent members of the class. Vinci always raved about how difficult the problems were and then turned up with them all done; Speilman also raved about the difficulty of the problems, but he **never** had them done.

The teachers were a grand bunch of fellows, always ready to help us out when the "wind started to blow," but also making sure that the wind never stopped blowing. Mr. Beiler clarified the difficulties of the Calculus, so that even Baumstein understood him. Mr. Schauss did the same with the intricacies of Mechanics; Mr. Kunz provided a distinct contrast to the dullness and mechanical thought of the other subjects with his modern, up-to-date, educational theory, and practical knowledge.

Pinkerton advertises, "Our men never sleep"—the U.S. Post Office Department boasts, "Neither wind, nor rain, nor sleet, nor snow, deter our men from their duty"—the noble ideas of the E.E.s is embodied in their motto, "Neither Calculus, nor Elements of Trade and Contract, nor Tallman's equations, nor Physics E.&M., nor Mechanics shall stop our sleepless men from a swift destruction of the more pleasant things in life." The class certainly worked hard this year. But, it hears from all directions that it "ain't seen nothin' yet."



Pres., F. McGinnis; Vice-Pres., H. Parsekian; Sec., M. Aquino; Treas., E. Michaels.

NIGHT TECH '40

RETURNING from a welcome vacation, the fourth year night Chemical Engineering class, veterans of three long years of hard campaigning, girded their loins for another attack upon the mysteries of science in general and chemical engineering in particular. Except for obtaining the distinction of being the only engineering class to vote against the Blanket Fee, the year started just as all the previous years had. However, the difficulty of the subjects seemed to increase directly as the square of the length of incarceration.

We heard warnings from every side regarding the difficulty of the fourth year work. "Boy! Just wait until they start 'slinging' German at you." "That quantitative course will knock you over." "Boy! You sure are in for it." But we were game.

An acute observer could recognize a member of the class immediately. The symptoms are recorded in any complete textbook on Neuro-Physiognomy. They consist primarily of a paralysis of the muscles controlling laughter and a general facial tension resulting in a solemn hangdog expression.

Although these symptoms may be applied to any of the fourth year classes, when murmurings that sounded suspiciously like—ich habe gehabt, ich hatte gehabt, ich werde gehabt haben, etc., came floating down the ancient halls, the presence of a Chem. was almost axiomatic. For the benefit of those students who may have wondered at the quaint quasi-modernistic drawings which decorated the boards of classrooms we had just vacated, we wish to explain that these are Phase Diagrams, an integral part of Physical Metallurgy. Despite the labor and the difficulty, occasional brightness entered the lives of the students as, for example, when they discovered that with only three hours of time, they were far ahead of the day school who had five hours of lab. Another compensation for their labor was the information that the Elementary Quantitive Analysis course at Cooper was equivalent to an Advanced Quantitive course in many colleges.

A class of less than half a hundred naturally fosters a greater intimacy and camaraderie than was previously possible. The private idiosyncracies and individual whimsicalities of the classmates stand out in sharper delineation against the severe background of academic life. Impressions have become established and we no longer think of each other as mere names, but—to mention a few: the oratorical Kusevich; the deft Parsekian; the statistical Goldberg; the gentle Quinn; the ingenious Grohse; the critical Rabinowitz; the sharpies Gormezano, Friedman, Strohm, et al.; the argumentative Goode; the metallurgical Pfann; the operatic Zinberg; the ingenious Sonberg; the jaunty Fleck; the auto-minded Walsh; etc.

The school year of 1937-38 dawned bright and clear. The easy-going M.E.'s looked forward to the rising sun with eyes bright and faces rosy with anticipation for the work ahead. Ah, the unthoughtfulness of youth! How they looked forward to work with all the verve and vigor of the newborn! The poor suckers didn't know what they were going to get.

We registered—hopes still undashed—paid our Blanket Fee (some of us did, anyhow)—copied our programs—consulted among ourselves and agreed that it would be a snap of a year. The fifth year M.E.'s tried to tell us what it would be like, but we just didn't believe them. They tried desperately, argued decisively, but they could not rouse us from our state of bliss, or should we say "daze"? We refused to be convinced. Poor misguided men! We didn't know . . . didn't know.

Came the first day of the new college term! Yippee and stuff! Classes had begun! We were headed for another successful year! Nothing could stop us! It took us exactly two insignificant weeks to put us in a very thicker-than-thick pea soup fog the like of which we had never seen. Still we thought we could master the obstacles. Little did we "reck" with Old Man Time.

We began to look forward to any holiday, no matter how brief, as a day to catch up on back work, and not as a day of rest. Thanksgiving came and went and so did we—and not a book was cracked. Bad cess to all of our resolutions to do work on studies.

Quizzes came fast and thick and plenty tough, but we took them in our stride. Some strides were a little faltering, some were firm, and some were more wobbly than a baby's. We tried to keep our heads above level in the swamp of studies but some of us went under and passed from the "happy" picture. Those who still hung on with a grip like death, were beginning to mutter and mumble that things in general were not so easy after all. We suddenly realized that there was more to this than we had been told.

Christmas loomed on the horizon and with it our determination to catch up over the holidays. But it seems that we all took the "advice" of one of our instructors and hid our books in a corner, and took them out and dusted them off a few days after New Year's Day.

Mid-term exams reared their ugly head. There followed a week of freedom when nothing was done and then started the beginning of the second semester. With renewed vigor we began work. By this time our class of twenty had dwindled to eleven staunch and lonely souls.

Somehow or other, we managed to struggle along. The class had no meetings or social functions of any kind—not even a beer party. We have neither the time nor the energy for anything except our jobs and Cooper Union. Girl friends, we have none; our families wonder who that strange man is that they see for breakfast every morning and who that boarder is who spends his week-ends in his room. Sometimes even we wonder who we are.

The majority of us hope to get through this fourth year with colors flying. Those of us who succeed will look forward to an easy course in the fifth year and so we go on, and next year we probably will scoff the reports of the difficulty of the fifth year that the new seniors will be passing around.

With the sword of Damocles suspended none too securely over our heads, we, the fourth year Civil Engineers (Oh Yeah), timidly and reluctantly prepare ourselves for the ordeal of examinations.

Sleepily we wend our way with circles under our eyes and our once smiling countenances are enveloped with signs of stress and strain, the tokens of our battles of more than three long years.

'Tis a far cry from those nights one August, many, many years ago, when we ventured through the portals of Cooper Union and nervously, with much biting of nails, pitted our knowledge against the entrance examinations. The survivors thrilled with pride and inflated their thoraxes when informed by Dean Bateman that they had successfully withstood all onslaughts, and were welcomed into "Cooper" with congratulations. The two hundred of us, aye! A mere two hundred out of two thousand applicants, embarked gleefully (heedless of warnings), and with much gusto, upon the rocky road of lore.

With a song in our hearts and a will to win, we passed the milestones that marked the completion of two not too hard years. Bravely and undaunted, and with banners flying, we set forth to capture the milestone of the third year, oblivious to the fate awaiting us. Many of our comrades fell by the wayside unable to forge through the

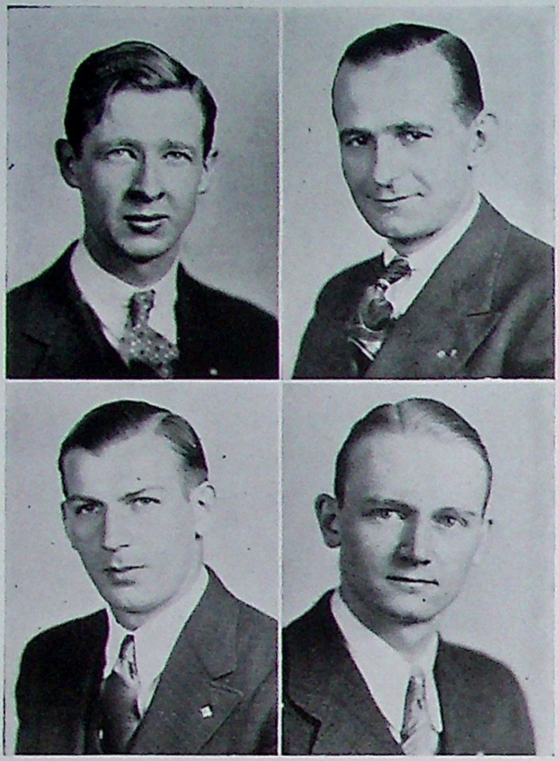
Classrooms provide good exercise for necks.

homework assignments that barred our path and increased in thick profusion. Midnight oil was burned to light our narrowing path as we fought on and on to surmount the looming and onrushing obstacles of examinations. Hurrays and hurrahs echoed forth as we triumphantly encountered our objective. We mourned a little our diminishing numbers and the loss of our former comrades. Happiness, however, was paramount and our lot did not seem so hard. Alas! Our happiness was short lived and we bore the truth of the aphorism that happiness is born through pain. On, on again, this time to the fouth year, we marched, weak, battle scarred and very, very weary. Our course was beset with such formidable foes as Differential Equations, Mechanics of Materials, Advanced Surveying, Metallurgy, Hydraulics, Civil Engineering Laboratory and others.

Our campaign is almost over and the ominous zero hour approaches. To fail, or not to fail, that is the question! We plead and implore the Omnipotence to succor us from an ignoble fate that is surely ours. Oh, for a "C," just a meager "C"; nothing more, nothing less do we ask for. Amen.

Dealing in personalities, the E.E. boasts of the attainment of the position of No. 52 on the New York Fireman's list by C. J. Nelson. With pride, the E.E.'s point to each other and their peculiarities. To Charles Grebert, 50 and 15 volts are the same; that is, if the conditions involve a fraternity initiation and himself as initiator. And then there is Donald Marstellar, Hyde Park's gift to the E.M. Lab, who raised the class standards last year by getting an "A" in lab, and thereby aroused the ire of his fellow technicians; Plotkin, who proved that all Hydraulics and Mechanics of Materials problems are statically and radically indeterminate; and Nat Lipowitz, the first to apply the 3/2 power law of filament emission to the solution of the mesh equations of a mutual inductance bridge.

The left hand group takes notes on D.C. Machines, while the section above lends an ear to a recitation in Mechanics of Materials. Pity the underdogs so obviously working on a Lofgren exam.



Pres., J. Brady; **Vice-Pres.**, F. Vanek; **Sec.**, W. Klein; **Treas.**, H. Bahrenburg.

NIGHT TECH '39

THE return to school last fall seemed no different from that of previous years; the same summer tans and beach and mountain romances, which to comply with all Cooper tradition, had to be terminated, simultaneously with the first meeting of classes. However, it seems as though at least one of the boys is playing with fire by not placing his girl friend in cold storage until next spring.

The work of the year was found more interesting than that of any of the previous four, but as usual the same old cry of being overworked persists; and it is not entirely exaggerated, what with E.E. Lab, dynamo design, A. C. circuits, heat power, machine design, and business organization and management constituting a semester's work for the E.E.'s. Each contributed their little bit to keep them anchored at home week-ends and cemented to the library seats every spare moment before class each evening.

The Mechanical Engineering Laboratory was very interesting. Here the boys attained their hearts' desire, namely, playing around with machinery. Many happy hours were spent around the boilers in the comfortable heat of late September, but it would have been much more pleasant in December. Various engines, gauges, and instruments were tested and many fuels analyzed. Of course, reports were written. A very important subject to this group of engineers was Heat Power. Nozzles, blades, and velocity diagrams were studied in great detail, especially just before exams. More power to the boys.

The real mystery of the year to the M.E.'s was metallography. It took about six weeks to find out what it was all about, and the other nine weeks to catch up on the work. Metallography laboratory was also a headache for most of the students. Many specimens of various metals or alloys were polished and etched by them and then examined in the microscope.

For the second consecutive term there was 100% membership in the A.S.M.E. from the M.E.'s of this class. Again Mr. Albert Budde was elected secretary of the student branch at Cooper Union. At one of the meetings, Paul "Offset" Weber gave a talk on photo-offset printing. However, there seemed always a few moments during which the students were able to reminisce of the good time had by all at last year's annual dance and contemplating the still better time they were to enjoy at the coming one. Such topics as beer being a beverage too inferior for such an occasion were discussed. It also appears according to rumors that Henry Wenson will be spared the uneasiness of being the only one in class to attend the annual in a tuxedo.

In spite of all the work of the year it was a successful one in so far as social activities were concerned and at this early date the fellows are already making arrangements among themselves for enjoying the summer vacation together.

Raconteurs and yarn spinners have long told of the prodigious feats of the legendary Paul Bunyan. To assume the proportions of a Paul Bunyan was no mean accomplishment. Yet that distinguished gentleman's mantle seems to be draping itself around the shoulders of the upper classmen in the C.E. course.

Let it accidentally be told that you are a member of the Fifth Year C.E. class and your listeners exclaim: "What! Are you one of those?" Such an expression of awe cannot fail to be slightly flattering, inasmuch as it exhibits keen appreciation of the tremendous difficulties which must be overcome in order to reach that stage of the course. Undoubtedly there will come petulant cries from those in other branches of study that their particular courses are difficult beyond belief, but the fact remains that they are still staid and earthbound and far from their position of pre-eminence which the C.E. holds in the minds of lower classmen. Let us depart slightly from consideration of the C.E. student as such and consider the personnel of the Fifth Year classes, elected by popular acclaim to their high position. Truly democratic.

First, there is Joseph Barker, that exponent of free and earnest thinking who refuses to accept book solutions as presented, but who must work out a more concise one to his own satisfaction. Joe is an insurance wizard and 'tis said that upon the slightest provocation will offer to cut your premium in half by merely adding an apparatus which will positively prevent fire from doing anything but lighting pipes.

Next there is Melvin Hutchins. Mel can be classified as the persistent type of student. His attention to detail can be surpassed only by his eagerness to learn all there is about reenforced concrete. Try as we will, we just can't fully catch up to Mel in R.C. as he always seems to be about two steel and one concrete areas ahead.

What this city would do without Harry Kessler no one can say. He is at present employed by the city, and is high on the list for fireman. If this go-getter is not mayor inside of twenty years then we'll miss our guess. Aside from his municipal tendencies he has a quick mind and likes nothing better than asking questions, particularly about surveying where he and Mr. Roth have been known to haggle over a point until the supply of arguments on both sides have been exhausted.

Next on the roster is John King. We believe Johnny is missing his vocation because he could make an admirable member of some city's Chamber of Commerce. This is based upon his eulogies of the fair community of Flatbush which he will extol to the skies on the slightest provocation. His idea of indoor sport is to find scales on the slide rule which will give the answer without moving the runner. Baseball is his other diversion, and anyone who broaches the topic to him is seized, escorted to the nearest seat and subjected to a barrage which leaves him mumbling "base hits," "earned runs," and "infield flies."

Leo Tobias is truly the fashion plate of the class, being always impeccably groomed. Besides being a Beau Brummel, this be-mustached gentleman is a good, old-fashioned math wiz and has caused us no end of embarrassment, and the instructors no end of amazement, by snapping out answers to equations before all the conditions are known.

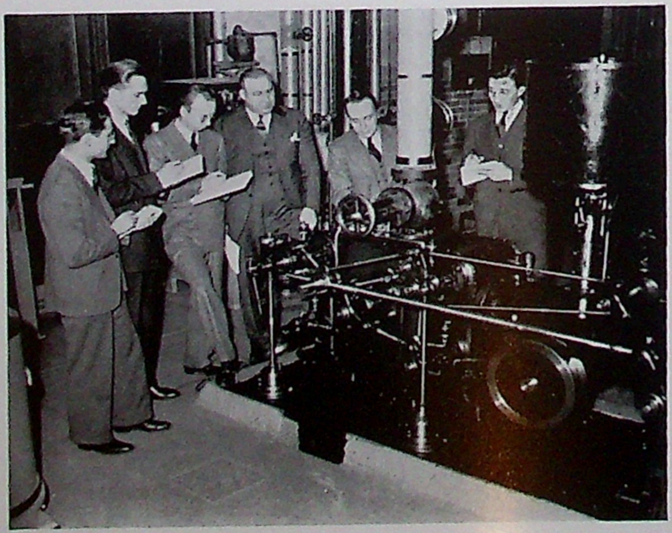
Finally there is Frank Vanek. If ever there was an organizer, a live-wire, and a politician, Frank is one, for he has held many extra-curricular posts. To be able to pass all your subjects is commendable, but to pass them while holding down all sorts of school posts is a man-sized job. We hesitate to think of the grades he could attain if he did nothing but study.

The fifth lap of the six lap course is just about over and the Ch.E. section still boasts of having 18 regular students in the running.

"Why not?" say the Civils, Mechanicals and Electricals, "It's a snap course."

As an answer to that, the Chems challenge those writers of long reports to stop copying for a few minutes and try learning a couple of pages of organic or physical chemistry.

These two subjects, Organic and "Fizz Kemm" are the highest hurdles for the "synthesizers," but Doc Sherman and Doc Stolzenbach do a good job of adding



Steam engines demand voluminous notes.

interest to their lectures by interspersing interesting anecdotes and barnyard philosophy to the bare facts of the subject matter. "Two Gun" Bill Fitzpatrick and "B.S." Harry Taylor do their best to get as many anecdotes and as few bare facts as possible.

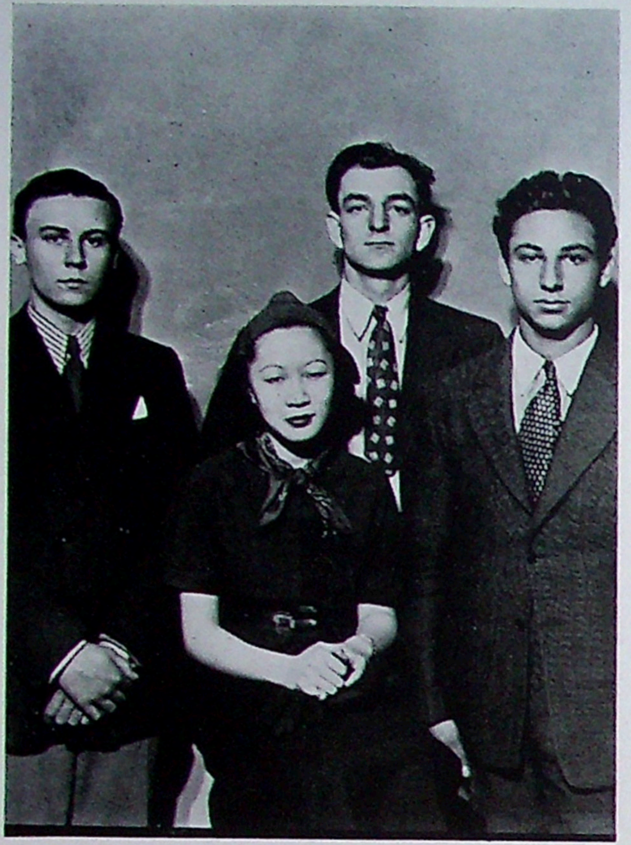
As a welcome change from the many lecture courses, the Chems make merry in the confines of the Organic Labs on Thursday nights. This is the lair of "Champ" Ralph Koliner and his lab partner, "Flash" Ed Roskowski. Besides dodging their own boiling chemicals, the rest of the class has to keep one eye on these dashing exponents of "at least one experiment a night." This class boasts of having had the biggest blaze in Cooper history and recommends "Fireman Save My Child" Jack Bateman to the N.Y.C.F.D. for his quick work in grabbing the fire extinguisher and putting out the flames.

Other classes of interest—more or less—were: Strength of Materials ("Kid Cooper" Ben Sirois enjoyed this course); Fluid Dynamics (An added attraction was the taking of individual snapshots, starring "Crimson" Bob Wiesendanger); and Literary Research (A cinch for that mighty hunter, "Apple" Herb Bahrenburg).

Our other contemporaries of the fifth year night Chems are: "All A's" Bob Goldberg—even the Chem course is easy for Bob. Marten Brown—Bob's shadow. Bernie Sobel is another fellow who takes the tough subjects with ease. Jerry Kuzmick—a quiet, sociable fellow who already has one Chem patent to his name. Jack Adams—short, but don't pick on him. Herman Woelicke—"I'll bet I got home later than you did last Saturday night." Herb Mitchell—doesn't suffer from insomnia, especially during school hours. Frank Garner—that perfume odor is from the labs at work, fellows. Charlie Luhrs—specializes in German Beer Songs and—"Wee Willy" Kaufman—occupies half of the organic lab by himself. Bob Jahrling—can sleep with his eyes open.

However, with all the trials and tribulations of five years behind us, and with the hardest part of our Cooper education already recorded as history, we go on to our sixth year with revelry in our hearts, and smiles upon our countenances.

Fifth year revels: Smells are not the least product of the Organic Chem Lab—the E.E.'s like to see if the machines will actually run—the motto of the C.E. class is "Get that tenth decimal place!"



Pres., S. Gordon; Vice-Pres., H. Collins; Sec., J. Brice; Treas., J. Wong.

DAY ART '41

AT last the great day had arrived. After the suspense of waiting for that memorable little penny post card, came the endless wait until October fourth when all we greenhorns were finally pastured in dear old Cooper "U."

The day of the entrance examination was the most enlightening day for a difficult test. The rain came down in buckets as approximately four hundred and fifty bedraggled, presumptive artists made their appearance on the field of battle (the Great Hall) to fight their way in. There were a great many gasps of nervousness after we had passed through the first part of the exam. Everybody was uncomfortable because of the damp clothing, and it made it all the more difficult to concentrate. Many took their shoes off and tried to make the best of their appearances. Then we were faced with the problem of drawing clothes over a chair (showing some emotion), such as a tired working girl's coat and shoes. The second problem was to draw a plan and perspective of a modern house for two people, and the third was to design a radiator cap in clay for an automobile. We certainly worked that day, but the seventy that did pass said it was well worth the trouble.

The excitement ran high on the morning of registration. Everything was so new; we had a fine time exploring the school, including Adolph's elevator, the eighth wonder of the city of N. Y.

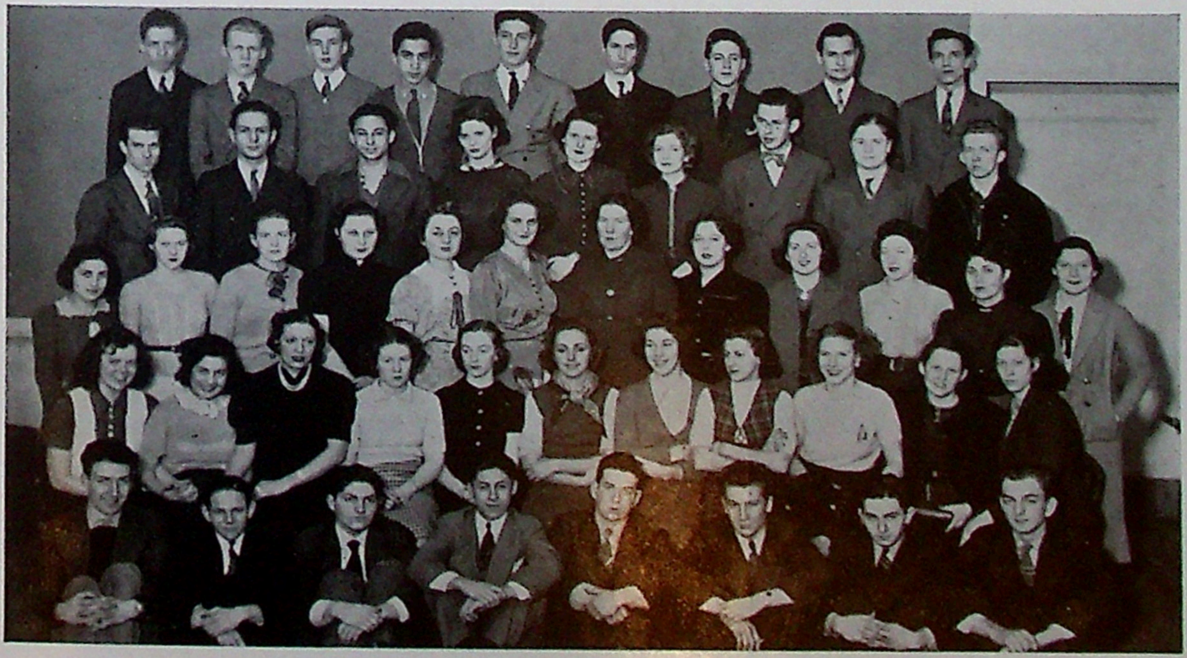
Now a little about the students of the best first year class

Cooper Union has ever had. At least we thought that, until Mr. Purves called us all to his office one fine day and said the football playing and dancing in the halls had to stop, and the general attitude had to change for the better, or else! Everybody vowed, after that little conversation, that his manners were going to change, and thus far, they have.

We freshmen are well represented in all the activities of the school with Sid Gordon doing cartoons for the Pioneer, and Lisa Wolfson and Edith Kerpner on the staff. The Fencing Club also lures Lisa and Lydia Czapek; Eleanor Eller, June Ptacek, Murray Feingersh, Rosita Rogliano, Edythe (Rickey) Sobel and others find consolation in tripping the light fantastic at the dancing club. The class clowns, Dan Shapiro and Andy Rosenbaum, often find themselves cutting capers in front of an audience during the recess periods.

An amusing incident occurred one day when wood was needed to build furniture for our houses in architecture. Alice Munson got the bright idea that wood could be had at a furniture store on Eighth Street, so during lunch hour Esther Behrendt, Shirley Zweifach, June Ptacek, Dorothy Bloomfield and Alice went to this store. After much consultation and a ride down a rickety elevator, they all paraded out of the store and up Eighth Street with long planks over shoulders, under arms, and dragging along the pavement. There was a barrage of horn tooting and everybody turned to stare at this procession of young females, laughing hysterically and stopping every now and then to pick up a plank or two that had slipped. There were two policemen walking along with them and chatting until their curiosity was satisfied. To top it all the wood was never used and can still be found in Mr. Priestly's architecture room in the basement.

Bottom row—C. Macauley, G. Levy, D. Shapiro, M. Sperling, A. Ehrlich, A. Loscalzo, L. Elias, S. Gordon. Second row—M. Kempson, R. Ragliano, H. Baumann, Z. Mott, G. Van Kampen, M. Tichenor, A. Kellman, H. Bott, P. Valentine, D. Fazakas, L. Czapek. Third row—N. Ayanian, H. Grott, D. Blace, J. Ptacek, L. Wolfson, D. Bloomfield, D. Van Dusen, S. Zwiefach, E. Finkelstein, B. Snyder, A. Monson, D. Rubenfeld. Fourth row—R. Metz, S. Weiner, H. Collins, E. Eller, E. Sobol, N. Zimmer, M. Epstein, P. Lubell, J. Priest. Fifth row—W. Fort, C. Peterson, J. Scherer, R. Simpson, M. Feingersh, B. Kessler, A. Rosenbaum, L. Fried, J. Witkowski.



A stranger entering the sixth floor would certainly find the freshmen in as comfortable attire as any of the upper classmen, noting Donnie's slacks, Winnie Belfant's overalls and Barbara Sneider's delectable, delicious, delovely smock of apples, grapes, and other fruit.

The course of the first year is rather different from the previous years'. There is a full course of Decorative Design, Architecture, Painting, Plastics, and Lettering with a full day a week of each, except Lettering. The Decorative Design is the same as in other years, but we've been told that in Architecture we are learning the more technical aspect of house building (as well as the plans) to have a better idea of why the foundation should be three feet below the frost line and what type of brick formations, whether Flemish or English cross, should be used. The six plans which were the simplest to build were chosen and the models were quite superb. The good workmanship and practicability of these houses were remarkable. All this is quite puzzling but intriguing to the laymen. Once you're in the know, however, it becomes exciting fun.

Our friend, Mort Epstein, certainly turned red and felt as big as a pinhead one day in Painting. The class was getting noisy while the model was resting, but those working on the still life wanted peace and quiet. We've often heard Mr. Turnbull say "Quiet please, ahem," so Mort began imitating him. We heard the door slam and a "Quiet please, ahem" followed. However, a few of us who were near Mort when he let out his plea, saw Mr. Turnbull sitting a little behind Mort, but he, alas, didn't know it until Mr. Turnbull got up and stood right in front of Epstein and began laughing. Of course everyone was laughing then, but now Mort looks around him first before he lets out the "Quiet please, ahem," in a basso profundo voice.

It took a little while for us to understand what we were doing in Plastics class. The tearing up of pieces of paper and folding and cutting them into kindergarten lanterns and such, then being told of its aesthetic quality was a little hard to digest at first. The surprise came when we had an examination and found out that wading through "Technics and Civilization," "Art and the Machine," and "New Visions," wasn't all in vain, and that we really were well-informed after being in Plastics for only three months. The gathering of a lot of refuse material for designs has begun to be fun instead of a bore.

Rest in a life class—note approaching foot.

We have quite a few people with interesting backgrounds. Lisa Wolfson whose home is in Denver, Colorado, lives in Greenwich Village among les artistes during her stay at Cooper Union. Carl Peterson, our Swedish blond, does some very good photography. His pictures of the bow of the Queen Mary, the Bronx River, and an East River dock scene were admired by everyone when he brought them to school beautifully mounted. The B class have their group of the Three T's: Tim (Helen Bott), Tish (Marcella Tichenor), and Tony (Annette Kellman). When you see three young ladies "acting up," it might be they.

It is hoped that a good time was had by all at our "Kiddie Party."

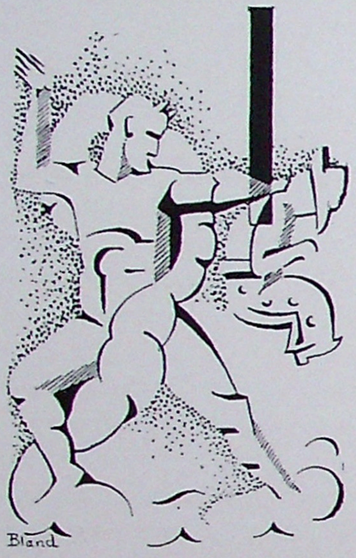
During the Christmas holidays, there was much doing, for Etta Bauman certainly had a novel idea when she gave a "Hay Ride" as a special treat for her classmates in B. The affair started at her home in Plainfield, N. J., where there was a wagon piled high with hay, and two horses with that posture called "swayback," but that only added to the fun. Everybody brought lunches and they started off. The reporter from the "Plainfield Courier" snapped their pictures and took their names as the fourteen began their jaunt. They all sang and had a grand ride. The wagon stopped at a little country inn where they had lunch. They all danced and afterwards they hiked in the woods and had chocolate milk at a dairy. Those who went hiking had to thumb their way back and some walked. The ride back was more enjoyable than the ride there, but we've heard from one and the other that the moon wasn't shining.

At one of the first class meetings Sid Gordon was elected president; Harold Collins, vice-president; John Brice, secretary, and Jean Yee Wong, treasurer, by an almost unanimous vote.

Our freshman year has sped on to its close, leaving pleasant memories of fascinating study that opened our eyes to the new technical qualities of art as well as giving a new aesthetic meaning to the common everyday things which surround us; of a year filled with gay amusement and a score of new friendships, as well as sad disappointments and happy conclusions for many; a year which we will all regret as having sped too soon.

No, we're not cutting paper dolls—we're learning how to apply texture to composition.

The Nations



IMMIGRATING from all parts of the adjoining territory, of all faiths, religions and creeds, students come to The Cooper Union to study Art and Engineering.

In a similar manner, from all parts of the world, of all religions, and from countries with all types of political structures, Nations have come to the City of New York to participate in the 1939 World's Fair.

The alertness of little Belgium won for it the distinction of being the first foreign nation to have its plans accepted by the fair authorities. The Belgian drawings were rushed across the Atlantic in the speedy Normandie, a French ship. Aboard the same liner bearing the Belgian drawings were the plans of the French Government.

It was not known whether the Belgian courier was cognizant of the presence of the French plans but he left nothing to chance. While the Normandie was at quarantine, the Belgian blueprints were transferred to a waiting speedboat and hurried ashore. A taxicab dashed them to the Empire State Building where the offices of the World's Fair were then located. The drawings were entrusted to Grover Whalen and he, departing immediately, had the prints spread before the members of the Board of Design within a half-hour.

The Belgian pavilion will occupy 56,500 square feet of land and will be thoroughly modern in design. The main entrance will be faced with glass to a height of 50 feet. The broad expanse of glass will be repeated on a lesser scale along the walls of the building giving a surprising effect of solidity and lightness. The walls will be of terra cotta with accents of blue stone to harmonize with World's Fair colors of that sector which merge from blue to red. The interior of the building will be rich with marble panels and teakwood doors and frames.

The Peruvian government proposes to link closely the past and present in its World's Fair exhibit. Peru's display will include much of the picturesque character of the old Inca civilization that once existed in that now modern country. The hammered silver work of the old Peruvian artist, and the display of Peruvian agriculture both old and new will be the main features of this exhibition.

Egypt's green banners will fly over a towering structure as richly embellished as a Pharaoh's palace of antiquity. In the exotic halls of the pavilion, amid many treasures of both old and new Egypt, will be three great murals depicting the Egypt of Antiquity, the Modern Egypt, and the Egypt of Tomorrow. Another feature of the exhibition will be an Egyptian restaurant and kitchen, modeled after such quarters in a typical native home, where girls in national costumes will serve the dishes of the homeland.

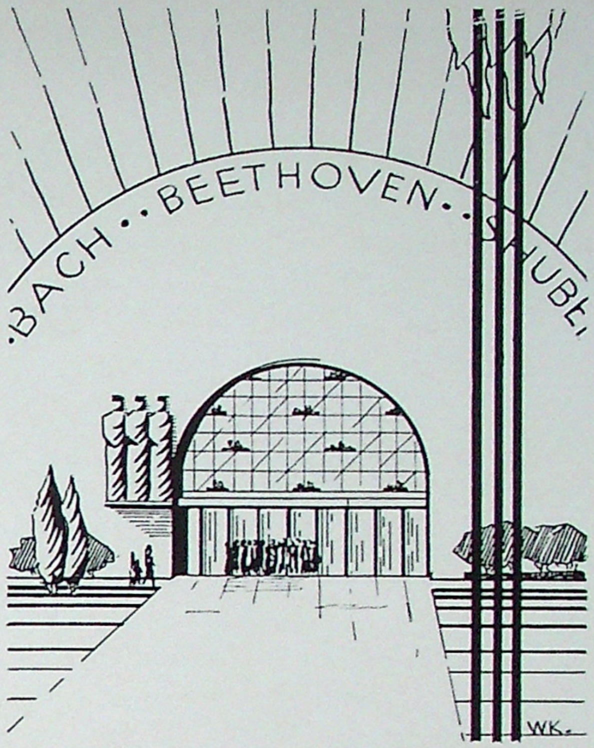
The Norwegian Building will be a replica of the Norwegian Royal Residence at Trandjhem. This seventeenth century structure is the largest all-wood building in Scandinavia and one of the historic features of Norway. Big timber will be specially treated to give the Fair replica the patina of age and weathering and when completed, the edifice will be an exact duplicate in every detail of the original. Within will be displays of Norway's industries, such as fishing and canning; and a sports museum which will trace the history of skis, skates and other winter sport equipment.

The British exhibition will be jointly sponsored by the entire British Empire. The exhibition will show, through a tracing of history, the increasing effect British influence has had on the civilized world down through the decades. In addition, the British home industries will be shown in their modern settings. Even more effective will be the plan to bring a real glimpse of the English landscape to the Fair. Buildings of typical English architecture will be erected, surrounded with English gardens, paths, and hedges; complete in each detail. The English garden with its roses and other perennials, its box hedges, and its shady nooks is bound to have a broad appeal to visitors from every country.

Hungary will feature in its national demonstration the hero of the nation's liberty, Louis Kossuth. One reason for this is that he visited the United States in 1851. Included in Hungary's presentation will be exhibitions of her industries with her flour milling being stressed. Budapest's flour mills are so advanced that the great mills at Minneapolis are modeled after them. Wine-making is another of Hungary's industries that will be emphasized; Hungarian tokay being known the world over. Folk lore and folk dancing will lend color to the exhibition.

The World's Fair of 1939 will feature not only exhibitions from the prominent countries of the world but even from the League of Nations. Mr. Noel Field of the League described the intent of the League display. "It must be understood that the League's exhibit is in no sense propaganda. We want both the opponents and the proponents of United States entry into the League to see the exhibit, learn exactly what it means, and then form their own conclusions. We want to show the people of the United States what an enormous percentage of the League work is non-political. Also, we want to show that part of its work in which the United States has shared—in the improvement of public health, in access to raw materials, and in the campaigns against narcotics and white slavery.

International participation in the World's Fair will tend to bring about international amity to a great extent and will at the same time serve a valuable educational purpose. The foreign exhibits will show Americans the strides forward which have been taken by the exhibitors and the strides which they intend to take in the future. In addition, ideas from all sections of this country will be collected; the entire conglomeration serving as a reservoir from which students may draw. Adding their own modern scientific and artistic training to this reservoir of information, and combining both into one organic whole the worker will be ready to create and carry out newly coordinated mechanisms both social and mechanical which will lead to a better world. The benefits accruing to the entire world should serve to bring the dream of the World of Tomorrow much nearer to reality.



THE EXTRA-CURRICULAR ACTIVITIES ARE THE SURGING RED BLOOD CORPUSCLES OF THE ORGANISM THAT IS COOPER UNION. WITH THEIR EXISTENCE THE DULLNESS OF PROLONGED STUDY IS ENTIRELY ALLEVIATED. INTENSE STUDENT INTEREST AND RESULTING COMPETITION IN SCHOOL POLITICS IS INSPIRING TO THE ACTIVITIES.

ACTIVITIES

GENERAL STUDENT COUNCIL

A determined looking student speaker presents his views to the General Students Council.

STUDENT COUNCIL

G. BARTHELHEIM
T. BERLIN
J. BRADY
A. DUNN
J. FALK
H. FLAR
S. GORDON
G. GREEN
F. HAUCK
H. HORNICKEL
F. McGINNIS
B. MEYERSON
N. RABINOWITZ
E. WHITE
C. WYTHE
Chairman, L. ZERNOW

IT is Friday evening at about 6:15 and we find ourselves before the large entrance to the Hewitt Building. Shall we enter these mighty portals of Cooper Union's more modern structure and spend some of our valuable time exploring within these mighty walls? It looks too inviting for any kind of substantial resistance and we succumb quite readily to the delightful temptation of barging in and snooping around. The doors close behind us as we are in the midst of a large desolate hall (desolate at this hour anyway). A low murmur of human voices comes to our auditory canals from somewhere above. A stairway, the only means of reaching these upper recesses, immediately attracts our fancy and we pounce on this non-resisting medium for our ascent.

The semi-mysterious atmosphere has enveloped us, and in keeping with this mood we steadily creep up this engineer's gift to the shoe manufacturers, in the immediate direction of the human babble of undiscernible voices.

Slowly but steadily we approach one of the many rooms on this upper floor where through the glass door a warm light beckons our hesitant undertaking.

Shall we seize the advantage of the ignorance of our presence, and scurry away quietly to avoid the possibility of being eye-witnesses to a dramatic scene, or shall we risk our necks by staying so that we may satisfy our biting curiosity? Our inquisitive nature is dominant, however, and slowly we push back the door and poke our bewildered heads in the opening.

"Won't you come in?" From somewhere within comes this sweet friendly invitation cordially bestowed upon us. We make our entrance with flushed countenances. Approximately twenty-five sane-looking young people are seated comfortably and informally about the schoolroom. At the head, their chairman, whose name we later learn is Louis Zernow. Already we have gathered that a school meeting of some sort is in progress, and judging from the mixture of instruments and school equipment (T squares, drawing boards, triangles, paint brushes, oil boxes, and the like) we also surmise that both the art and engineering schools are represented. (Sherlock Holmes, that's us.)

The head of this rather happy gathering, observing our quandary and becoming fully aware of our ignorance of the facts and fancy, completely enlightens us.

"This, my friends, is the weekly meeting of the Cooper Union Students Council. Most of these students gathered here are members of this council, which represents all the classes and schools of the Union, day and night."

We are informed that these members are the presidents of their representative classes, elected by popular acclaim to their high position. Truly democratic.

At these meetings, various student activities, their place in the school curriculum, amount of money to be allotted to them, and the officers who are to control them, are voted upon.

First, however, they are fully discussed, pro and con, before deciding their fate. It was our unfortunate lot to make our grand entrance in the midst of one of these heated controversies.

"Have a seat and make yourselves at home," Mr. Zernow's concluding words to us. "These meetings are all open ones."

"Thank you," we express ourselves gratefully as we choose our seats far in back and park timidly in them. Fortunately for us, we are soon forgotten as the council resumes its tiff, upon which we so unthoughtfully burst in.

THE CABLE

THE editorial staff of the 1938 Cable was appointed during a most hectic session of the Council. When the politicians retired for another year, the staff gathered and began planning the year book that would be "different." During their meetings, the idea of a World's Fair Theme was brought forth. Here was a background broad enough for the wildest flights of fancy, as well as the most concrete facts!

The cool-headedness of Editor-in-Chief Bill Vreeland was an outstanding factor in banishing the jitters. His calm, deliberate attitude served as a counterbalance for other staff members. They often had to work without the guidance of their editor, but the moments of most efficient work were those when he was present. Indeed, it may be said that half the Cable was written between 11 P. M. and 3 A. M.!

The reduced Cable budget was a weighty problem on the shoulders of Business Manager Frank Vanek. He worked persistently toward securing enough income to produce a representative issue. His letters to prospective subscribers were models of persuasiveness.

As Associate Editor, Bill McShea was an efficient lieutenant of the Chief. Bearing the brunt of numerous details, Bill pleasantly but determinedly kept the journalists' noses to the grindstone. Not least among his duties was the weekly shepherding of the flock to some eating place, which, let it be known, was a most involved procedure.

The artists' viewpoint found a staunch champion in Associate Editor Camille Marten. In many debates over content and layout, she could be as firm as a rock, in a lady-like way, of course. Camille will be remembered for her carpet bag cornucopia as well as for her charming enthusiasm.

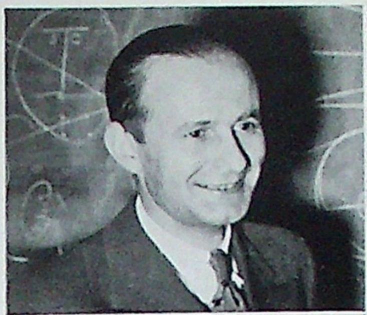
During the coffee an' sessions which often followed the midnight labors of the staff, ye Ed and Associate Ed were accompanied by a pair of fellow dunkers who did much to make the Cable possible. The two Charlies, Eiwen and Dohn, respectively, often worked over hopeless material delivering articles finally worth reading.

The drawings and typography of the Cable are the results of the efforts of the Art Editor, Barbara Bland. The layout of the book also shows the stamp of her creative ability and flair for the unusual. Barbara designed the cover of the Cable as well, although the final choice of colors made her "unhappy."

Photography was the specialty of Emmabelle Cook, who loved to carve people up to produce striking effects. The schedule was so mapped out that the pictures were taken in Click-Click fashion. Cookie's personality persuaded many bashful instructors to pose.

The so-witty articles about the Night School students would have been missing save for the eloquent pleading of Ken Neuman, Night Editor. Between thoughtful puffs on his ever present pipe, Marvin Weiss wrote the Theme Sections of the Cable.

Since he helped to fill the last pages of the book, the gentleman whom we have chosen to bring up the rear is well-qualified to do so. Charles Hauck, advertising entrepreneur, applied his talents to that indispensable section.



Frank Vanek

Camille Marten

Charles A. Hauck

Wm. G. E. Vreeland

William T. McShea

Emmabell Cook

Kenneth Neuman

Barbara Bland.

Charles Eiwen

Marvin D. Weiss

Charles W. Dohn

Varied Views of

The Staff at Work

PIONEER

A POSITION on the Pioneer Staff is a very transitory one. Due to the high mortality rate the Editorial Board is in a constant state of revision. Editors come and go with alarming rapidity. It is no unusual occurrence to jump from Photo-Editor to Associate Editor in two short weeks. (Note: His initials are Saul Aranow.)

A rare phenomenon occurred this eventful year. The same Editor-in-Chief remained in that capacity for the whole year. He was neither flunked out, expelled, nor a victim of nervous prostration. This rare individual is an Art Student, the first of his species to attain the exalted position of Editor-in-Chief. His name, Jerry Sanders.

The story of his rise to fame and fortune is truly a page from a Horatio Alger novel. From proofreader to Editor in four short years. In 1934 he embarked upon his career as chief (and only) proofreader. In 1936 he became Managing Editor (and Proofreader). And now in 1937 he reached the pinnacle of success—Editor-in-Chief (and Proofreader). Perhaps an observant reader may have noticed something radically different about the layout of this year's Pioneer. The responsibility for this rests on the artistic influence of the Editor.

Aiding and abetting the dastardly deeds of the Editor was the aforementioned Saul Aranow, Associate Editor in the crime, accessory before and after the fact. His rare ability to write 1000 word articles on 50 word subjects has filled many a gap in the Pioneer's columns.

In charge of the financial affairs of the Pioneer was the diminutive Murray Weintraub whose short legs were unable to keep up with the rapid pace of advertisers running in the other direction. His word-a-minute editorial style of last year was a distinct disadvantage, in writing letters to advertisers. He hopes to have at least one mailed before the end of the year. Returns are expected to swell next year's Pioneer budget.

The highest honor held by a Night man was the position of Managing Editor. The blot upon the escutcheon of the newspaper was Marvin Weiss. He did his darndest to coordinate the reports of the Day and Night School. Of course he couldn't help it if there was nothing to coordinate. He was also the binding (or was it the missing) link between the

Editorial Board and the Production Staff.

Ray Bendett, the twinkletoes of the typewriter, held the exhausting position of Day News Editor. His aptitude for creating stories where no stories existed solved many ever present problems.

From the fraternities rose a solitary figure, staunch defender of his cause. Ed Hoffman, Night News Editor, never suffered from a paucity of frat news. Except for drastic restrictions he could easily have filled all the pages.

Contrary to popular opinion the Sports Editor is not deaf, dumb and blind; he's merely dumb. Rotund Maxwell William Strauss is known familiarly as "Max," "Billyboy" and other names not fit to print. Contributing largely to his success as the "Bench Warmer" is Max's ability to cover more of the bench than any of his predecessors.

"Tiny Ted" Berlin was drafted into the office of Feature Editor. With the decease of the feature page he assumed the newly-created position of Copy Editor. It was only Berlin's perspicacity and patience that brought to the pages of the paper that well-known savant, Professor K. K. Savtoot.

Smarting under the stigma attached to the name of Art Editor, Walter Buchholz strove to defend his ideals. However, before he could prove his worth the art page vanished in the throes of the business depression.

With high hopes, Norman Koretz became Photo Editor. Placed in charge of the morgue, he couldn't have found a deader job. He managed to stay awake long enough each Friday to write some headlines. It was a great event in the life of Staff Photographer Dominick de Simone when Jerry said, "we have just raised enough money to take a photograph. Go out and get one."

Upon the bowed shoulders of George Rolly rests the heavy responsibility of turning a dummied paper into the real thing. Who can blame George if errors slipped precipitously into the Pioneer. To err is human and George is only an Engineer. According to the latest statistics, Rolly has ferreted out three mistakes from a total of three thousand.

Many were the disagreements Frank Quattlander had with George Rolly over who let the most mistakes slip through. They finally agreed on one person . . . the Editor.

Another unfortunate was Nat Richmond, who found time to scribble a few lines about various things each week. Drama, books, features, rags, bottles, and bones were all grist to his mill.

After two years of monopoly control, the "Lust for Art" column went under joint ownership. Camille Marten and John Maxon combined their efforts to produce this feature.

What fun it was to romp with Camille among the beautiful, ancient cathedrals and to view the exhibitions through the eyes of John.

With the motto "The pen is mightier than the sword . . . at least for copying," Norman Gardner has proceeded to remove and revise choice tidbits from other college papers. Those rank plagiarisms were inserted in the heretofore unsullied columns of the Pioneer under the conscience-stricken title "Collegiana."

Only columnist to stand the strain for two years was Gregg Brown. The glamour of Hollywood was no mystery to the Tabloid Theatre reporter. His reports ranged from the dainty dimples of insipid ingenues to the pitter-patter of perspiring prodigies.

Of course Andre Dury continued his column from last year but only spasmodically. He found plenty of time to rest up between installments of "We See by the Papers."

A newcomer to the staff, Julius Port is already famous. It was due chiefly to his unquenchable fervor that the Pioneer succeeded in recovering Professor K. K. Savtoot from his exile in Staten Island.

With the News Editor searching feverishly, albeit unsuccessfully, for willing reporters, there appeared on the bulletin board a scurrilous little rag. Attracted by its gaudy display, the editor approached it. He noted the masthead and then proceeded to seek out the culprits. He found the authors of "Adler's Daily Blast" and convinced them that the Pioneer could use men of their calibre. That is how Adler, Berger, Machlin and Sarant were inveigled into the clutches of the Pioneer.

Starting their newspaper careers as sports reporters were John Rozolis and George Constantinos. These aspiring newshawks covered many a Saturday game on Monday by simply getting the story from the Manager of the team.

Not satisfied with his cartooning responsibilities, Sid Gordin decided to publicize the Dramatic Club.

The brain fevers of Ed McCracken and Ben Lasky were often exhibited in the Pioneer in the form of headlines and news stories. Many a reader was literally struck in the face by their ebullitions in the journalistic art.

Fred Kitty showed himself to be a lion in handling news items. Abe Margolin added to his super activities as a headline writer a super program for getting the Pioneer out of the red by soliciting for more ads.

From Deutch to Bleecher to Rabinowitz, the Night Circulation ephemerally passed. The pressure of Night studies necessitated the periodic transfer of personnel.

HONOR AWARDS

USUALLY, in every institution, there is a certain group of students who give cheerfully without any material recompense of their time and abilities to planning and carrying out enterprises for the edification and enjoyment of all of the students. These people are the life-blood of all extra-curricular activities and it is their activity which creates the spirit and builds the character of the school.

For many years, the leaders in school affairs at The Cooper Union received no recognition for their work no matter how arduous. It was to honor and compensate this group that the Gold "C" Award was brought into being.

The Gold "C" Award is made on the basis of a point system; students holding positions in which they are of service to the school are allotted so many points depending on the severity of the task they must perform and on the responsibility it contains. A student must earn twenty-five points before he can be awarded the Gold "C." The Silver "C" is a higher award requiring seventy-five points.

Several meetings were held by the committee this year at which the members attempted to establish a permanent point system for the distribution of points to the various activities. Up to the present, no definite award system had been set down and the distribution of the award was somewhat indiscriminate. Under the chairmanship of Max W. Strauss, the committee compiled a system which they believed to be fair and impartial. All members of the school were not of the same mind however and there was some acrimonious debate as to why this position received ten points while the fellow holding that position which required twice as much work was allotted only five points. The question was brought before the Student Council for discussion. The matter was dissected carefully by the Council members who made a few minor changes.

The number of points which were awarded for each activity are too numerous to recount here in this limited space. The committee endeavored to award points to students who participated in activities which rendered service to the school and who received no other recompense. Students who distinguished themselves in athletics were held to be not entitled to points because they received letters and numerals. Participation in the work of the engineering societies and of the fraternities was considered to be more for self-benefit and was not allowed points.

The recipients of the award are listed on the following page. It is their service to the school which creates a true school atmosphere and each one should be congratulated on his splendid work. It is hoped that the Gold "C" may stimulate participation in extra-curricular activities and help to produce a better school spirit.

SILVER C

JERRY SANDERS
FRANK VANEK
WILLIAM G. E. VREELAND

GOLD C

ANTHONY ANCONA
SAUL ARONOW
THEODORE BERLIN
BARBARA BLAND
EMMABELLE COOK
CHARLES DOHN
EDWARD H. HOFMANN
HERMAN C. HORNICKEL
CAMILLE G. MARTEN
ALEXANDER MATIUK
WILLIAM T. McSHEA
HERBERT ROSENBERG
MAX W. STRAUSS
MARVIN D. WEISS
CATHERINE WYTHE
LOUIS ZERNOW

COMMITTEE

Chairman	MAX W. STRAUSS
Secretary	EDWARD H. HOFMANN
Treasurer	JULIUS PORT
	HERBERT ROSENBERG
	BENJAMIN ZAPOLSKI

The recipients take pride in their awards.

THE ANNUAL DANCE

LOUIS ZERNOW, Chairman
BARBARA BLAND
BERNARD CENTER
EMMABELLE COOK
ROBERT EGBERT
PAUL KAUFMAN
CAMILLE MARTEN
KENNETH NEUMAN
JERRY SANDERS
WALTER VIGNINI

THE annual dance was a great success this year—due perhaps to the larger facilities and the convenient location of the bar. The dancers began filling the rooms at about 9:30 and were welcomed by a massive ballroom, illuminated by vari-colored lights and by the inspiring music of Sammy Ross and his orchestra. Some came in stiff Tuxedos, others in dark suits, but all wore smiling faces in anticipation of the evening. The more popular ladies wore dance programs in place of bracelets. Along both sides were tables and chairs—but try to use them; they were reserved for instructors and far-sighted groups of students.

About two hours after the opening, the room was filled with activity. Hundreds of couples danced around the ballroom. Some could dance, others could not, but it was difficult to tell for each was concerned with his or her partner. The kaleidoscopic lights dimmed and glowed to the mood of the music, and 1500 young couples swayed and shagged accordingly. Along the sides, friends

introduced other friends; male students introduced other male students, prompted more or less by the desire to see who the fair damsels involved were, and how they looked. Also instructors from the Engineering School met students, and wondered how they could take a girl to the Annual and still pass their exams. None the less, they drank on a common ground.

Toward the end there was a quick outrush of people and a small return group—that was the way to the bar.

But let us see for ourselves what the average student actually goes through when he goes to the Annual.

Bright and early Saturday evening, the student finishes combing his hair. He has already vanquished his downy crop of whiskers and now nothing remains to be done but call for his girl and go. So, putting on his newly-pressed best suit, for he would never think of going formal—he is a typical freshman— he listens hopefully for the sound of a horn belonging to his classmate's auto.

There it is, and out he pops. In two steps, he reaches the sidewalk, and another step finds him

inside the rear of the car. In front is his classmate with his girl. Introductions follow.

Then they drive to Joe's girl's home. More introductions. Finally they are on their way to the dance. "The Riverside Plaza, James!"

After several miles of streets and a bridge or two, at approximately 9:30 they arrive at their destination. Ten minutes later after parking the car, they all enter the hotel.

"What, no pictures?"

"Nope, not a single picture," and they find that they have been mugged by an empty camera. However, they don't mind, but just go in and join the crowd.

They look about them and see everything from formal to barnyard attire. "I guess we're all right," Joe mutters. The girls have received small dance booklets and Joe and Jack immediately appropriate every dance. "Of course, we'll sublet some dances," says Jack gaily.

And then the music. Sammy Ross and his orchestra are excellent. Dancing is a great relaxation after Pierce points, determinants, and valences. Although they started stiffly, the students are soon going strong.

At 10:30 the "C" awards are given out and the Freshmen watch and envy. The Ex Post Facto keys for journalistic work on the Cable are awarded at this time by William Vreeland, Editor-in-Chief.

Of course the students have introduced all their classmates and acquaintances and half the time the original couples are separated. However, separation makes the heart grow fonder, and reunion is easily accomplished.

Later the students and their friends get set to watch an exhibition of the Big Apple. Immediately the floor is cleared and a group of younger dancers in sharpie clothes troop into the center. They go right to it, and with gaping mouths the eager crowd watches sensational but orderly dancing. Incidentally three of the Big Applers are Night School Engineering students, namely Harold Guerci, Stewart Mason, and John "Angus" Lasco. Then comes a cloudburst as confetti, balloons, and paper streamers appear. These add to the convivialty of the already well-warmed-up revellers. Private Big Apples start all over the dance floor and in every corner of the ball-room.

All evening the students have gazed enviously at the tables where most of the "C" awards have come to roost. "Next year" they tell their girls, "we'll be sitting there getting 'C's." However, the hilarity at the tables is more than matched by the general crowd who push and pull on the dance floor and at the bar. Drinks of various kinds put the students in the red, but after all an annual comes only once a year, and the majority of fellows have come prepared.

Then bright and early in the morning at two, three, and four o'clock the students take their leave. Getting hats and coats on the run and settling into the car, they go on one last swing of streets and bridges and then home, sweet home. Before turning in the students decide that the Annual was a lot of fun and should occur at least twice a year.

The efficient committee which produced this gala affair deserves many words of praise. Upon their shoulders fell the responsibility of making difficult decisions. The committee will long remember the long involved discussions incident to deciding when and where to hold this year's Annual.

Emmabelle Cook, Barbara Bland, Wolfgang Kassner.

DANCING CLUB

EVERY FRIDAY SIXTH FLOOR

4:30 - 6:30 BEGINNERS TAUGHT

TWO engineers are standing before this sign. They turn and walk to the elevator. Adolph's voice booms out, "No engineers allowed in the elevator! You'll have to walk up."

Enter the two symbolic engineers. They see a mob of people and hear a voice from on top of a chair.

"All those who have danced before will please stay out in the main hall; the rest may enter the room on the left. The instructors are: Emmabelle (Cookie) Cook (President), Barbara Bland (Secretary), Edna Atkins, Arline Thompson, and Camille Marten. Get your tips for leading from Wolfgang Kassner (Vice-President). Here's where our two friends part; one stays in the main hall and one goes with the beginners' group.

Fifty males in single file marching (we mean waltzing) around the room. Take it easy and do relax—never, never, let your heels go on the floor—don't stare at your feet—take your hands out of your pockets, please. One, two, three, no—I can't teach you how to shag today . . .

However the scene is quite different in the center hall. Here they come down the line. It's Anne and Milt doing the shag, and who's this? Bob Rohe trucking all by himself in the corner. Wolfgang looks in vain for a German fraulein who can really waltz but contents himself with Dorothy. And Bill Hollander is swinging—doing something vaguely Spanish. The floor is cleared and a shag break is taught. The dancing is resumed, each couple struggling with the new step. The music is stopped again and a frantic plea is made for new phonograph records. For those whose eyes failed to register the step the first time, the routine is repeated. Music again and it's every man for himself.

The instructor escapes to the hall again and joins the festive throng which is now at a feverish pitch. But there is Scotty eyeing the clock on the wall. Soon the last strains die out and all dive for their coats.

Organ Grinder and monkey on the loose.

When can the refreshments be coming?

ARTISTS AFFAIRS

A FINE tradition at the Cooper Union is the Art School Dances run every year by the classes in the Day Art School. Credit for the origination of these novel parties goes to the present graduating class who presented the first party in their Sophomore year.

Preceded by a lengthy and extremely thorough advertising campaign, the second year Day Art School presented their Bal Boheme on March the 17th. Six immense decorative murals, the composite work of Sy Klate, Gus Green, Ralph Danziger, Ruth Mueller, Kay Kopton, Herman Schlackman, Julius Orgel and Al Eisman replaced Mr. Harrison's paintings on the wall, changing the atmosphere from one of sophistication to one of frivolity. These murals depicted varied but modern interpretations of the dance, music, the theatre, and a review of the art school's models for the past year (this with the help of the upper classmen).

The murals at the Bal Boheme provided striking and most unusual backgrounds for the multitude of colorful costumes which varied from Mrs. Harrison's gracious lady to Marion Kotzen's rather gauche Apache dancer. Milt Pedolsky as an organ-grinder with Teddy Eron as his amusing monkey colleague, collectively won the first prize. Arlene Thompson, in a Chinese get-up, shuffled off with second.

Previous to the dance, hectic rehearsals went on backstage for a farce on the opera "La Boheme" and a last minute skit on the selection of a new art director for Cooper Union. This last proved to be the surprise hit of the show due to the excellent comic portrayals of Mr. Purves and Mr.

From far and wide, chiefly from parts unknown, they gathered.

Shaw by Klate and Danziger. Among the other people depicted were Salvador Dali, Picasso, Frank Lloyd Wright and Schiaparelli.

The Art Director skit was written completely in rhyme. Although the skits were smoothly presented, much anguish was undergone behind the scenes. At the very last minute most of the scripts were misplaced, only to be found after a great deal of worried hunting.

Much was added to the jovial air of the Bal Boheme by the presence of many of the art instructors, all of whom had an even better time than the students, judging by their hearty laughter at the caricatures of themselves presented in the skits.

For many, the high point in the entertainment was reached when the refreshments were served. The dance committee saw seemingly enormous quantities of ice cream, soda and cookies vanish into thin air. The committee members finally had to cart in a new supply of these tempting delicacies. After the last dance, everyone departed gay and happy, leaving the committee to clean up after they had gone.

Not to be outdone by the Sophomores, the Freshmen held a Kiddy Party on memorable April the first. In place of the modernistic murals of the Sophomores, the walls were decorated with large crepe-paper roses which aided in creating a most charming atmosphere.

Over two hundred kids flocked to the sixth floor for an evening of riotous fun. Kiddies of all sizes, newsboys,

A moment's pause before the show.

dolls, brats, Little Lord Fauntleroys, and even a pickaninny put in an appearance. The competition for the prize costume was fun provoking. Sylvia Kushmer, as the pickaninny, emerged from the shouts and laughter with first prize.

Dancing and more dancing was offset by impromptu entertainment on the part of the audience. Songs, recitations, and one-man acts were relished by all. The chiming in on the chorus of popular songs by the spectators was particularly vociferous.

Biggest event of the evening was the stampede which ensued when refreshments were announced. Everyone innocently rushed into the Witches' Den—a gruesome spot, replete with dangling skeletons, witchs, spider webs and an ugly vulture whose gleaming eyes peered wickedly through the studio windows. None of this impaired the appetites of the healthy "kiddies" who quaffed witches' brew and munched sandwiches hungrily. In the milling mob were glimpsed Mr. Purves and other instructors manfully battling for their bottles of Coca-Cola.

Lester Fried was the capable chairman of the committee which produced this very successful party. Hal Collins officiated as the "cute" master of ceremonies. Other committee members were Sid Gordin, Helen Bott, Beverly Finger, Marcelle Tichenor, and Donny Fazakas.

When the kiddies became tired they collected their dolls and toys and playthings and manfully trudged home.

Open House

ANNUALLY the doors of The Cooper Union are thrown open to the friends of the students and to those high school students who would be engineers. On alternate days, students of the Day and Night Schools of Engineering operate the laboratories and act as guides for their fellow-schoolers. Senior students operate the equipment while Juniors act as guides.

Lucky C.E. students are assigned the enjoyable task (minus observations and report) of cracking wood blocks, twisting iron bars, smashing wood timbers and sending water streaming through the weirs, nozzles and wheels of the Hydraulic Laboratory. E.E. students operate motors and electric equipment and have an enjoyable time synchronizing alternators for their friends who are bewildered by the strange electrical terminology. The M.E. department operates its impressive Corliss engine on compressed air supplied by the Two-Stage Air Compressor. In addition, the Chemical Laboratories are open for inspection. Furthermore, the Department of Structural Engineering exhibits shop and detail drawings of bridges, buildings and girders designed and drawn by students while the Department of Machine Design and Engineering Drawing exhibits details of machine parts and many charts and diagrams. Several small acting models of various mechanisms are exhibited around which one can usually find a gesticulating M.E. senior.

Knowing C.E. students drag their fans into the Surveying Room, ignoring the subtitle "Entrance to Boiler Room." There, surrounded by the sleek, shining tools of the engineer, they relate stories about the time their fingers froze to the thumb screws.

All doors are open including the door to the Students and Graduates Room. The last is always of great interest to visitors because of the many historic relics it shelters. Pa gets a great thrill out of seeing his likeness in the same shaving mirror used by Peter Cooper. Ma is intrigued by the laces and tapestries of the Hewitts, and brother and sister are awed by the framed original of the patent granted to Peter Cooper for "the application of the reciprocating action of the steam piston to rectilinear motion" which is signed with the faded blue signature of Henry Clay, then Secretary of State.

Thus Open House stands as a tradition and a custom which will long be cherished and remembered by the students of The Cooper Union and their friends and relatives.

Open House

Art Exhibit

Art Exhibit

SINCE its early establishment, the Cooper Union Art Schools have steadily improved and advanced. This is particularly noticeable in the annual exhibitions held at the conclusion of each school year.

The Plastics exhibit was unique. Students work with a variety of materials, such as metals, newspaper clippings, wood, and glass. They seek significant art forms to be used as a basis for the solution of problems in industrial design. Here is a new field with limitless opportunity.

The Design classes had their usual splendid display. Even more modern than last year, this work was most impressive. The paintings and drawings were hung as one group, and not separated according to instructors as in previous years. The result proved that all Cooper Union students are creative and not limited to one school of thought.

The Illustration class worked on "The Store" by T. S. Stribling. The interpretation of "illustration" ranged from mural painting, to small figures of the characters, and photographs. The high quality of the work in the newly established Fresco Painting indicated a bright future.

The architectural designs and renderings, the models of homes, and the exquisite hand-lettered books and manuscripts, combined to make this exhibit the finest thus far achieved.

The Day Advertising Design class displayed commercial products designed by the students, including a table lamp, a coffee service set, and several book covers and jackets, as well as poster designs. The night class was represented by several large poster constructions and eye-catching hat boxes. A window display with a fashion figure in a white dress of soft folds contrasting with the background of abstractions, was part of this exhibit.

Sculpture was given its first important display in a room of its own. The white marble and plaster figures were greatly admired.

A new note in this year's show was the innovation of a fashion review presented by the Fashion students in addition to their usual exhibit.

An enormous amount of work attends the preparation of each exhibit. The versatility of the art student is shown by his building of the necessary properties to house the exhibition and his selection and organization of the material.

This year's exhibition, the result of enthusiastic cooperation between pupil and instructor, serves as an outstanding example for this and for other schools.

BLANKET FEE COMMITTEE

A. Matiuk, E. Cook, F. Vanek, W. McShea, C. Hauck.

THE Blanket Fee Plan was first inaugurated in 1935 as a means of subsidizing the extra-curricular activities in the Cooper Union. The plan was to have each student pay a minimum sum for which he would receive the Cable, Pioneer, one ticket to the Annual Dance and membership in the Athletic Association. The minimum sum as voted by the student body was four dollars.

With this plan in effect, the various officers were able to spend a great deal more time on their positions as heads of the activities since their financial worries were cut tremendously. There was none of the usual running after subscriptions and members as heretofore. In that way the activities functioned more smoothly and much was accomplished that could never have been done otherwise.

A more comprehensive Cable, covering the activities of the entire school, was produced, a much improved Pioneer made its appearance, the Athletic Association inaugurated intramural sports and the Annual Dance had the greatest turn-out ever seen at any Cooper Union student affair. The students, however, were not completely satisfied. They received a value return of ten dollars for the small investment of four dollars. They demanded a bid (two tickets) to the Annual Dance, a Saturday or Sunday gymnasium period and a few other small items.

The following year the Blanket Fee Plan included, for the same price, all provisions of the former year, plus the week-end gymnasium period, a bid to the Annual Dance, the Collegiate Digest added to the Pioneer, free membership in the Dramatic and Glee Clubs, no charge to any class for space in the Cable, and more intramural sports. The extra gymnasium period was discarded after a few weeks because no students attended. But the other provisions were carried out to their full extent. A new Cable, totally different in style and format was produced; the Pioneer showed still further improvement in new type forms and layout and the Annual Dance Committee had to provide a ballroom large enough to house a total of nine hundred couples.

Still the students were not completely satisfied. Some felt that certain items in the plan were superfluous, others felt that more benefits could be added and some wondered how all these things could be accomplished for such a small sum.

A new committee was appointed for the year 1937-1938. A poll of the student body was taken to ascertain in what activities they were particularly interested, the results being tabulated and published in the Pioneer. The answers to this poll were the deciding factors in the formation of a new plan. The provisions now in force include the Cable, Pioneer, Collegiate Digest, Annual Dance Bid, Athletic Association membership with several new intramural sports added and a home basketball game and dance, as well as free membership in the Dramatic and Glee Clubs with free admission to all plays and recitals produced.

The tentative plan for next year, 1938-1939, includes a few other items in addition to those of this year. Among them is a Student's Bible, which is a sore need for the students of the Cooper Union to instill in them a semblance of spirit and loyalty for their Alma Mater, something that is lacking in the school today. It is the earnest hope of this year's committee that such a provision be made and voted in favor of by the student body.

The idea of a Blanket Fee Plan to subsidize all extra-curricular activities is a worthwhile adjunct to student life at the Cooper Union. It enables the better organization and smoother functioning of the various activities besides giving to the student a real value for a comparatively small sum—a little more than one-third of what it cost in previous years. Yet there is still a dissatisfied element who persist in causing trouble by claiming that they do not receive all the benefits. The Blanket Fee cannot think of what else to provide for these men who refuse to take advantage of activities which tend to promote character, health and good fellowship.

The 1937-1938 Blanket Fee Committee has done a very fine job. With the adoption of the new plan for the next year the student will at last realize what the Blanket Fee Plan means to the student body of the Cooper Union. The Blanket Fee will always be the best investment a Cooper student could make.

THE DRAMATIC CLUB

CELEBRATING its third successful year, the Dramatic Club presented two plays in the Great Hall on May the ninth.

The drama, "Ile" by Eugene O'Neil, starred Sid Gordon as Captain Keeney and Elsa Bailey as his wife, Mrs. Keeney. Further zest was added by the excellent performances of Lester Fried as First Mate, Dan Shapiro as the Steward, and Anthony Lascalzo as Cabin Boy. Walter Buchholz acted as a most convincing Harpooner.

In contrasting mood to the serious drama, "The Monkey House" by Harold Callen was chosen to follow. Mike Colleti, a la Gorilla, kept the audience thoroughly amused. The stars, Joe Collins and Annette Kelemen as Mr. and Mrs. Oglerio, kept the entire performance lively, too. Dan Shapiro, the Foreman, Aaron Ehrlich, the Kid, and Anthony Lascalzo as Mike the Laborer, did their share to provoke laughs from the audience. Jerry Sanders as the Keeper, Arthur Singer and George Hill as the Movers, and Camille Marten as a member of the Zoological Society provided excellent support. Carl Peterson also performed.

Before the acts and between the plays, Camille Marten, appearing as a prim, elderly society lady, announced the plays and apologized, with no little wit, for the lack of proper theatrical equipment.

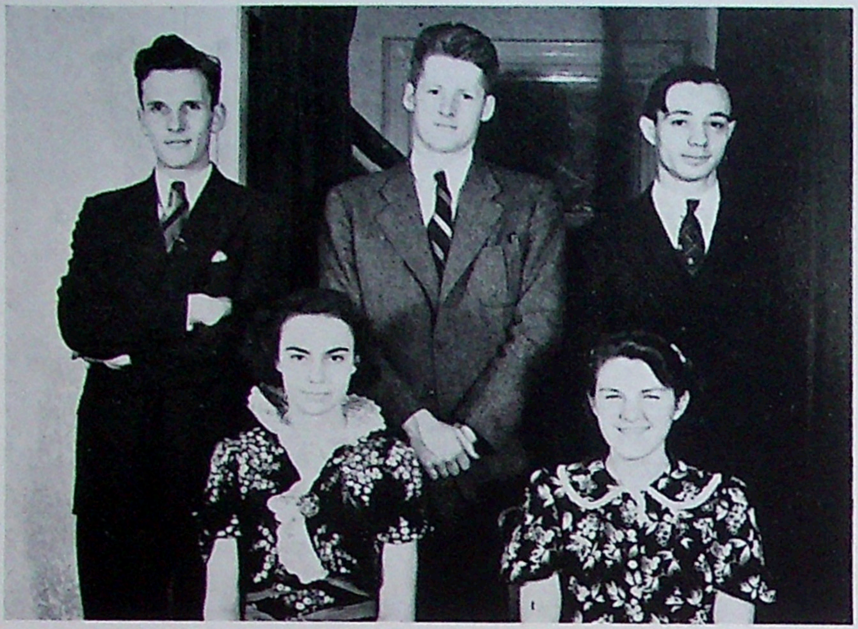
The lack of a curtain was supplied by black-outs. The pillars, unfortunately, simply had to be overlooked. The lighting effects and suggested scenery, created by Lester Fried centralized the attention on the place of action. There were no wings in which to wait for a cue, but a shadow and imagination served as well. Despite the many handicaps, the performance was a great success.

President
ELSA BAILEY

Vice-President
CAMILLE MARTEN

Publicity
SID GORDON

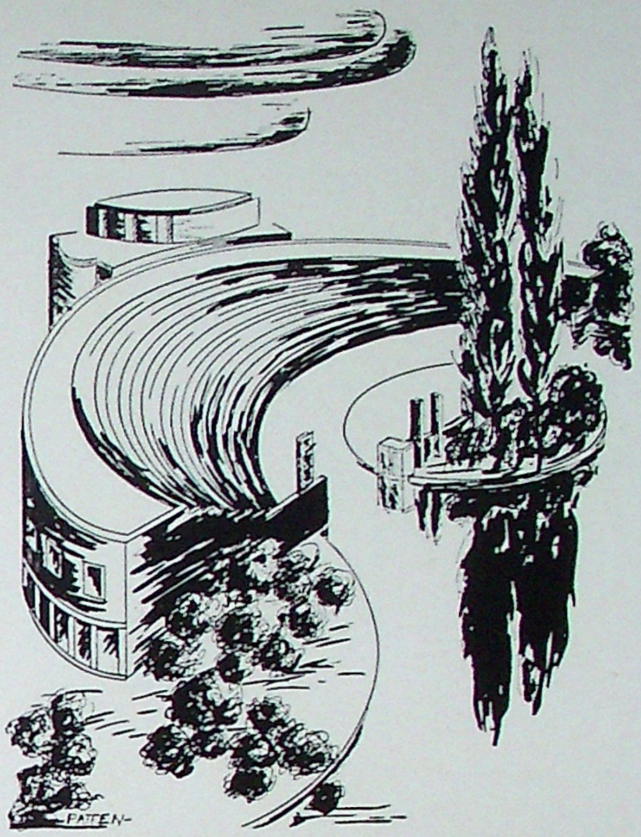
THE NEWMAN CLUB



E. Brickfield, C. Kirby, V. Maturi, C. Marten, A. Miller.

THE Newman club of Cooper Union has worked not only as a club within the school but has participated in the affairs of the American Federation of Catholic College Clubs as one of the hundred and fifty similar clubs in other non-Catholic colleges in the United States, Canada, and Hawaii. These clubs endeavor by means of lectures, seminars and other gatherings to further the spiritual, intellectual, and social welfare of its members. This presents to the Catholic student an excellent method of meeting others whose interests fall in the same general class both in college and life itself. This is concisely stated in the writings of the eminent Cardinal Newman: "I want a laity, not arrogant, not rash in speech, not disputatious, but men who know their religion, who enter into it, who know just where they stand, who know what they hold, and what they do not, who know their creed so well that they can give an account of it, who know so much of its history that they can defend it."

The most apt method of portraying the activities of the club lies in the presentation of a year's representative program. Meetings are held once a month during the school year. These meetings on Saturday evenings or Sunday afternoons afford an opportunity for both night and day students to attend. The first meeting of the year is mainly social in character. Here new members meet old, and the latter renew acquaintances lapsed through the summer. On the next, the informal and formal initiations are held. The informal part features the good-natured grilling of the neophytes by everyone else. The formal portion makes clear the history and the purposes of Newmanism. Thereafter there aren't any new members anymore and everyone participates in all the activities. From here on the club as a whole functions on social events, discussions based on papers presented by the members and an Annual Corporate Communion. Skating parties, picnics, amateur shows, swimming parties form the lighter side, along with Fitzgerald's thaumaturgy, and sleight-of-hand. To close the year we elect the new officers and formulate some plans for informal gatherings during the summer.



SPORTS SHALL ALWAYS REAWAKEN THE PRIMITIVE INSTINCT FOR COMBAT THAT LIES DEEP IN THE SOUL OF MAN. FRIENDLY COMPETITION SERVES TO BIND TOGETHER WITH BONDS OF UNITY A TEAM OF YOUNG PEOPLE. FROM SUCH UNITY CAME THE STRENGTH OF PRIMITIVE MAN, AND FROM SUCH UNITY COMES A SCHOOL'S SPIRIT.

ATHLETICS

ATHLETIC ASSOCIATION

Pres., D. Klein; Vice-Pres., J. Sanders; Sec., M. Strauss; Treas., H. Sonberg.

AN innovation long planned for by the Athletic Association is the Home Basketball Game and Dance. An unusually strong Cooper Union Basketball Team gave added stimulus to the officers of the A.A. who made this long desired affair a reality. The headlines in the Pioneer, "Dance Follows Victory of C.U. Team over Pace—Team Plays Brilliant Game before Large Crowd of Rooters Led by Dean and Mrs. Bateman; Score 49-35," might well cause this year's officers to swell out their respective chests in pride.

On Monday, February 21st, the Athletic Association sponsored a Monster Meeting in the Physics Lecture Room to which all Blanket Fee members were invited. Athletic Awards for Varsity Basketball, Intramural Basketball, Baseball and Swimming for the term 1936-37 were presented. Furthermore, short talks were made by the managers of this year's tournaments on the status of their particular sports. Howie Kutzelman spoke on interclass basketball and told of the exciting closeness which this year's tournament was really assuming. Swimming was represented by Charlie Dohn, who related that new waterpolo goals were being planned in an effort to revise the game of waterpolo.

Star event of the meeting was the presentation of a Major League Baseball Picture "Batter Up." The picture starred such outstanding baseball celebrities as Joe DiMaggio, Lou Gehrig, Bob Feller, Lefty Gomez, Carl Hubbell, Mickey Cochrane and Connie Mack. Of interest in connection with this showing is the fact that film for this picture was 30 mm size, making it necessary to hire Mr. Van Buren, who is a licensed operator, to run it off.

The Sophomores won the soft ball tournament for the second time in two years by beating all of their opponents—including even the smooth-working team which the Night School entered. The Night-men and the Sophs battled it out for first place this year while the Art School teams got lost in the outfield.

In the first inter-school softball game ever to be played by a Cooper Union "nine," the Cooper sluggers outhit the C.C.N.Y. batters to the tune of 7-4. This was a bang-up game throughout with Cooper gaining three runs in the first inning.

Also as a part of the softball tourney, a faculty team met a team of picked students who ran them through the mill. The faculty nine boasted such stalwarts as Messrs. Perez, Robbins and Roth from the C.E. department, Prof. Roemmle, Mr. Salma and Mr. Vopat of the M.E. department (en masse), Mr. Ayres from the Department of Machine Design, Mr. Kunz from amongst the bottles of H_2SO_4, and, of all things, Mr. Purves of the Art School. Dr. Findley also came down to make some thrilling catches in the outfield, although Mr. Perez with his seven league boots did not need much help in this territory. Final Score was 4-1. A large turnout was at hand to witness the unusual spectacle of the students trouncing the faculty.

Each year the Athletic Association receives an invitation from the New Jersey State Teachers College to compete in the Annual Metropolitan Class B College Track Meet held annually in Montclair, New Jersey. The Class B meet was inaugurated several years ago to afford an opportunity to those schools which do not have the same facilities available to the larger schools, to compete in an inter-scholastic track meet with schools similarly handicapped.

If there are any Cooper Union students who can (or think they can) run, jump or throw a weight, they should practice when and where they can for here is a chance to advance Cooper Union in the field of sports. The A.A. pays the entry fees and the train fare to this meet, which is held early in May. The running events are the 100 yd., 220 yd., 440 yd., 880 yd., one mile and two mile runs, and the mile relay. There are also the 120 yd. high hurdles, 220 yd. low hurdles, broad jump, shot put, discus throw, javelin throw, high jump and pole vault.

At a meeting of the Athletic Association held in April of this year it was decided by a vote of 31-1 to dissolve the Athletic Association as a body independent of the Student Council. However, the faculty committee on extra-curricular activities held this to be unconstitutional as not enough members were present at the A.A. meeting to determine the A.A. policy. At least 125 members should have been present. To date, therefore, the Athletic Association remains as the only extra-curricular activity under the Blanket Fee Plan, which does not come under the control of the General Student Council, although the Blanket Fee Plan itself is under G.S.C. control.

BASKETBALL

A REVIVIFIED Cooper Union Basketball team trotted out on the court this season. The team was one of the strongest which Cooper Union has had for years. Mr. Peter Ripps, the new coach, helped mold the boys into shape and he produced a really fine team. A helpful innovation was introduced this year—no mid-week games were scheduled—allowing the players more time for school work and encouraging the students to turn out for the game.

All of the games were played according to the revised rules which eliminate the center jump except at the beginning of the game and at the half mark. According to the new ruling, the team which has been scored upon immediately takes the ball out from under the basket. This ruling has helped the Cooper Union team considerably, as in past seasons the loss of the ball on the jump has been one of the failings of Cooper teams.

Almost a tradition now, the first game of the season was played with Columbia Pharmacy. Also following tradition, the team beat the Pharmacists by a score of 25-24. Fifty-five seconds before the end of this close game, the Cooperites were trailing the Pharmacists 24-21. Then, with a barrage of baskets, the maroon and gold players spurted forward to win the game by one point.

The Hoopsters rode to victory in the second game of the season played with Pace Institute. The final score was 32-20. Two of the star members of the team, John Mahoney and Sheldon Lang, the Cooper captain, were absent for the first quarter. To make up for lost time, they amassed 19 points between them in the second quarter.

Playing a team far above their class, the Cooper five lost to Manhattan College to the tune of 43-19. The team, although losing with such a high score, played an exceptional game considering the facilities and power available to the Manhattan team. Kennedy was high scorer for Cooper in this game, garnering 6 of the nineteen points.

Increasing their wins to three, the Cooper five beat Brooklyn College of Pharmacy with a score of 46-33. Again Kennedy was high scorer with eleven points, followed closely by Lang with 10 points.

By beating Savage Institute by a score of 34-27, the Cooperites showed fine form. The Savage team consists of men athletically trained to become physical education teachers and this victory was a fine feather in the hat of Cooper's team.

At this point, the team stood with four wins to one defeat and the latter an excusable one at that. Fine hopes were held for the team and spirit was running high. Then, the Cooper team, unlike George Washington, crossed the river to meet defeat. Two games were lost to Jersey colleges. The first game went to Rutgers by a score of 46-40 and the second to John Marshall by a tally of 34-33. These games were heartbreakingly close and oftentimes the weight of a referee's decision played havoc with the aspirations of our hard-fighting team.

The mosquito state was also the scene of the next defeat. The strange environment and lack of home rooters contributed to placing Cooper on the short end of a 54-51 score with Newark

University which has one of the best teams in the East. The Newark game was considered to be a pushover for the Jerseyites but the Hoopers, showing a surprising offensive, led all spectators at this game to think differently.

Cooper Union again sank into the bogs of New Jersey losing to Rider College by a score of 36-29. Frequent booes by Rider spectators accompanied the referee's decisions against the Maroon and Gold players. No Cooper Union spectators were present to either cheer or boo. It may be fairly said that Cooper Union far outplayed their opponents in this game.

In another heart-breaking game, the Cooper quintet lost to our traditional rivals, Brooklyn Polytech, by a tally of 38-35. With the score 16-8 against Cooper, in the first half the referees called the fourth and last foul against Captain Lang who was thereby disqualified for further playing in the remainder of the game. Rallying to the cheers of their captain on the sidelines, the plucky quintet brought the score to 30-28 Cooper's favor in the second half. But Poly recovered and with the aid of one foul after another came out on the top side of the final score.

The Maroon and Gold five was in a discouraging rut by now, and played a poor game against Hudson College losing 39-34. The Cooperites should have won this game for their opponents were far inferior to them.

Pulling out of that almost hopeless rut like a steam roller, the Hoopers gave Bard College of Annadale-on-the-Hudson a 61-43 pressing. Amassing the greatest number of points ever tallied by Cooper Union in a single game, the team rode to town with Schaffner as high scorer with 21 points.

A far-fetched dream became a reality with the playing of a home game against Pace Institute as a wind-up for the season. This is the first time in twenty-five years that Cooper Union has seen a home basketball game. Playing before a large, cheering crowd, the Maroon and Gold trounced Pace Institute once more by a score of 49-35. Kennedy was again high scorer with nineteen points to his credit. This game brought back fond memories of the earlier victories of the season.

The final analysis shows six games won as against seven games lost, a remarkable improvement over performances of previous seasons.

Among the team stars were Kennedy, Lang (the captain), Long and Skorski. Schaffner played well and John Mahoney, the "bruiser" was a much valued defensive player. Kennedy was the team's outstanding player, showing much of the form of the professional on the court. Al Krasnoff, a graduating Senior also contributed much to help the team play well. Dave Horowitz did a good job of managing the team. Let's give three cheers for Dave, he seldom gets any.

Basketball remains the most outstanding athletic activity at the Cooper Union. Those who have won their large varsity "C" this way have indeed earned the Maroon and Gold letter.

We look forward with optimism to next year's team which will be composed of this year's veterans with the exception of Captain Lang and Al Krasnoff who will graduate.

INTERCLASS BASKETBALL

RIVALRY in the interclass basketball tournament reached a peak this year as six strong teams battled at the Christadora House for the coveted class numerals. As an indication of the keen rivalry and the even matching, the present Junior team which won the tournament last year ended in the cellar position this year.

The winner of the tournament was the Sophomore team which waded through all opposition to come out undefeated and untied. An exhibition of enthusiasm rare in the annals of sport at the Cooper Union was displayed by the Sophs who would appear at the House with about fifteen men anxious to play. Some teams had difficulty digging up a fifth man at times so that the Soph show of strength was disheartening. And the second-year men were good too. Without a coach they were great in an interclass sense.

The dark horse in the race was the Freshman team which started late but finished strong. Captain Pickett had difficulty getting men out for the first games but at the close of the season his was a well-coordinated team. Their calibre was demonstrated in the two games they played with the Sophomores. In the first of these, the Freshmen remained on even terms with their opponents until a dispute arose and the game broke up in the third quarter. A return game was played in which the lower classmen were nosed out by the score of 27-26.

After the Freshmen came the Seniors, the Night School, the Art School, and the Juniors. The Seniors who had been able to win only one game a season through their previous three years showed their fighting spirit by winning three games this season. The Night team was a strong congregation but they had difficulty getting a full team out. The Art team was new to the tournament but they showed plenty of skill and should constitute a strong threat to the Tech teams next year. The Juniors were handicapped by too many quiz courses (so they said) and were unable to put a truly representative team in the field.

Basketball is one of the two sports which draw the interest of a goodly number of students and each year, bigger and better tournaments are anticipated. The teams in the 1939 series will have some difficulty surpassing the performances this year but the present champions can be sure the other classes will furnish stiff opposition.

SWIMMING – WATERPOLO

SEVERAL innovations appeared this year in the waterpolo tournament and swimming meet. For the first time in the history of Cooper Union a waterpolo team was recruited from among the Art school's stronger sex. Waterpolo goals were constructed and the rules of the game were revised. Furthermore, the swimming meet was held as an interschool event.

With leaden skies and falling temperatures prevailing outside, the waterpolo tournament was started in the heated pool of the Christodora Community House. True to tradition the waterpolo games were scrappy and hard fought. At one time during a game between the Nite men and the Art males, the entire two teams were piled up before the goal which Lester Fried of the Art school was defending. Suddenly a hand emerged from the depths of the seething mass of struggling humanity and smacked the yellow goal board resoundingly with the white ball. Credit for the goal went to Morrow, star player on the Nite team.

This year one team wore green hats while the other wore their natural hair. In their green hats, the boys looked like real denizens of the deep. Oftentimes these hats would be found floating around the surface of the pool like so much seaweed.

With a year of winning games behind them, the night school team formed a combination hard to beat. They easily won the waterpolo contest by overcoming all opposition. Those ace goal-grapplers, Morrow and Mulligan, together with Sorenson, Stewart, Deutsch the horse, Plum, Nedbalsky, Murray, and Higgins the giant, with the energetic Hamel as spokesman composed a well-organized team.

Surprise of the year was the strong team which the Art School boys mustered up. This inexperienced team started off strong by winning their first game against the day Seniors by a score of two to one. However, the nite mermen soon showed them how to play waterpolo to the tune of 9 to 1. These Art School boys have a good group of swimmers and between periods of rest and relaxation on the sixth floor they ought to have no trouble at all beating the homework-harassed engineers. Lester Fried captained the team composed of Ames, Gerland, Valentine, Rosenbaum, Collins, and Simpson.

The Freshmen also placed a strong team in the field this year composed of Ungerer, Colletti, Swenson, Saloway, and Pickett. The boys proved they had something on the ball by losing to the Nite men by the meager score of 2 to 1 in a hard fought game.

The Seniors, too, had their fling at the night men, coming out on the short end of a 10-7 score. This high score was due to the introduction of the new goals which are boards four feet wide and 18 inches high supported twelve inches above the level of the water at each end. Charlie Dohn is responsible for unmercifully dragging the following poor Seniors down to the pool for a ducking: Eiwen, Hammond, Ozsvath, Merlin, Weber, Knopfle, Dunkelman, Purr, Holdsworth, Lehrer and Matiuk.

Milton Breitman didn't have much success in getting the Sophomores down for their scheduled games partly because the team also plays basketball

for the class. The Juniors, a little alarmed by rumored stories of a veritable mountain of homework assignments, did not enter a team at all.

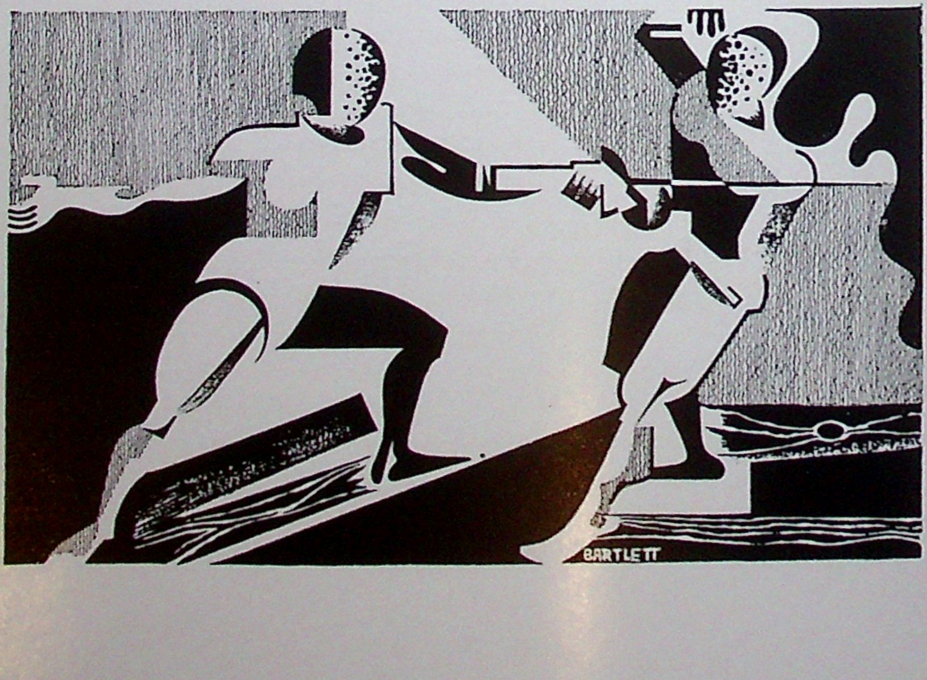
In the closest nip and tuck battle ever witnessed at the Cooper Union, the combined day school swimmers outswam the superhuman nite mermen by a score of 30-29 in the interschool swimming meet held April 19th. The most exciting event of this meet was the free-style relay which was held last. At this point, the score was 30 to 29 in favor of the day men. The four day men won the relay but it was claimed their anchor man jumped the touch. After much hot debate it was decided to re-run the event. The second time the event was run the swimmers swam arm to arm back and forth right up to a tie finish while their teammates shouted until they were hoarse. The record of the meet is as follows: Two length free-style—Bindman, N., 1st; Collins, D., 2nd; Dorph, D., 3rd. Two length breaststroke—Rosenbaum, D., 1st; Dohn, D., 2nd; Hamel, N., 3rd. Four length free-style—Bindman, N., 1st; Deutsch, N., 2nd; Slutsky, D., 3rd. Two length backstroke—Richmond, D., 1st; Morrow, N., 2nd; Collins, D., 3rd. Plunge for distance—Richmond, D., 38'; Bindman, N., 37'; Deutsch, N., 36'. Underwater distance—Dohn, D., 165'; Plum, N., 150'; Breitman, D., 138'. Medley Relay—Nite first—backstroke, Hamel; sidestroke and crawl, Morrow; Free-style Relay—Tie. No points allotted. Nite—Bindman, Hamel, Deutsch, Morrow. Day—Slutsky, Breitman, Dorph, Maturi.

FENCING

FOR a number of years, the idea of a Fencing Club at Cooper Union had been germinating in the minds and hopes of several ambitious art students. After timid excursions in the general direction, the first meeting of the Fencing Club was held in January, 1936. The red tape of faculty supervision had been cut away; the students attending the meeting were ready and willing to throw their support behind a new and, to most, a novel activity.

Because the new group had no official recognition, the task of coaching fell upon the shoulders of a few of the more advanced members. Dale Robinson, of the Engineering School, started the tedious work of teaching the novices the art of "thrust and parry." As the work progressed and sore muscles became the usual, the unwieldy group of beginners gradually became smaller and more rapid progress was made until the halls of the Sixth Floor resounded with the clash of steel and the crys of excited swordsmen.

A visitor in those early days of the organization would probably have been amazed at the large number of young people who, for apparently no reason, had hidden their faces in wire masks and were bent on piercing the physical body of their harmless appearing opponent with a sliver of steel. But there was purpose behind all of this turmoil, and the seemingly aimless waste of energy was helping these young hopefuls toward that exact coordination between mind and body that is essential in a good swordsman. A team was to be picked soon that would engage in competition with other teams as soon as such meets could be arranged. Unfortunately, the school year ended before the coach thought the team was ready for action, so that the fencing season at Cooper ended with a championship competition between the members only.



The second season opened in the fall and once again foil and mask became the apparel on Monday afternoon. The turn-out was greater than it had ever been, and several of the new members had had previous experience in fencing. This hastened the formation of a team to represent Cooper Union in inter-club competition. Long weeks of practice passed before such competition was arranged; and when the long awaited Monday arrived, the fencing room was crowded with those who wanted to see the contest. Many were the trembling hearts among our club members for, although the team had tentatively been chosen, the coach had told all eligible members to attend so that they might all "have a try." But ambition and stout heart could not defeat experience, and Cooper went down to a glorious defeat, with four victories and five defeats.

With the Fencing Club coming into its stride, the opening of the third season of the organization was attended by the largest turn-out in its history. Fully forty members answered the call to arms. This large turn-out was gratifying to all but a little discouraging to Mr. Robinson, for to him fell the task of coaching. His job was to teach fundamentals, separate the chaff from the wheat, and bring those of promise to the fore. In this work, he was ably assisted by another engineering student who had "grown up" with the Club, Walter Vignini. Gradually the work of whipping the club into shape progressed; slowly, to be sure, but as those whose interest was merely transient dropped away, the task became easier. Unfortunately at the middle of the season, Vignini found attendance at the class impossible because of a split program; and Robinson had to leave the group because of ill health. Thus, at one blow, the Fencing Club was deprived of the only two members who had had any experience in fencing outside of the school. The leadership was put into the hands of Mr. Bernard Olcott of the Engineering school.

This is where the Fencing Club stands at the end of the third season. The only obstacle in the path of fencing becoming a major sport at Cooper is the lack of adequate instructors. Both schools are filled with willing and capable material in the form of ambitious young men and women, who have felt the joy of personal combat with the civilized version of a sword.

Modern conception of an ancient art.

RIFLE TEAM

UNABLE to obtain the use of an armory or of the ranges at Governor's Island, the only practice which this year's rifle team could obtain from match to match was acquired by way of defeats at previous matches. That the loyal Cooper nimrods did not "give up the ship" in the face of such a discouraging outlook is indeed highly laudatory. Not only did they remain fighting, but at the end of the season they had improved their scoring ability to the point where they could outpoint teams having professional coaches and private ranges.

This year the schedule included top-notch teams like Brooklyn Polytech, St. John's, C.C.N.Y. and Stevens. Our team lost all of these N.R.A. Metropolitan Meets although some of the matches were quite close, the one with Stevens being lost by a mere matter of six points.

Two highlights of the season were the St. John's Invitation Metropolitan Championship and the National Intercollegiate Championship Matches. Cooper Union came out on top of Brooklyn College in the St. John's Match and this served to whet the riflers' appetites to the point where they were determined to end up in any other place but last at the National Intercollegiate Meet.

Held simultaneously in four colleges spread over the country, the National Intercollegiate Championship Rifle Matches afford every college team the opportunity to meet other college teams of national reputation and to take part in the good fellowship prevalent in rifle circles.

On that memorable morning of Friday, March 25, two carloads of "team" set forth on the long trek to the Coast Guard Academy at New London, Connecticut, to take part in the National Intercollegiate Meet. After many hours of uneventful travel in the "Lizzies," one of the members mentioned "sump'n funny in the sky to the north'd." It had grown dark and the cars were just outside of New Haven heading for New London. Stopping on the side of the dark road, all the occupants tumbled out to be struck by the beauty of the Aurora Borealis, glowing in all its glory, lighting up the sky in a glamorous fountain of vari-hued ilght. The beautiful spectacle will long be remembered by the members of this year's rifle team.

Late in the evening, the steaming "Lizzies" pulled up at the darkened buildings of the Academy. By pairs the tired Cooper nimrods were assigned to rooms and a few minutes after arrival the entire team was sleeping like bumps on a log with only an occasional wheeze or whistle here and there to break the stillness of the cool zesty breezes air-conditioned by the mighty Atlantic Ocean.

Next morning the team made acquaintance with the delightful custom prevalent amongst the Coast Guardsmen at the Academy, of rowing across the river Thames and back in the early grey morning—regardless of the weather. About this time the Cooper nimrods were engaged in making frantic raids upon adjacent rooms to obtain extra blankets. Thankful that they were not Coast Guardsmen (at that particular moment anyhow), the Cooper Union visitors finally eked up enough courage to leave their deliciously warm beds for the tingling "coolness" of the shower rooms. The invigorating breakfast was served in a light and cheery dining room by noiseless Filipinos of the Service. The meals were excellent, being truly an officer's mess.

The grounds of the Coast Guard Academy provided a colorful background for the day's events. First part of the morning was spent in "sighting in" preparatory to firing the record strings and for the selection of those teams which were to shoot in the morning relay. After these preliminaries, firing began in earnest; your school team shooting in the first relay. Scores were not to be posted until almost supper time so that the afternoon could be enjoyed by those participating in the morning relay.

After a delicious and satisfying lunch, the Cooper boys were at their leisure to roam about the Academy grounds. The complete facilities of the academy were available to the visiting teams and the Cooper nimrods soon became romping "mermen" in the steam-heated pool and gymnasium. Then there followed a self-conducted tour of the impressive steam and marine engineering laboratories where officers-to-be learn their entropies and calories. The elaborate set-up included a giant steam boiler and accessories cut down and laid open in the middle to the inquiring gaze of student engineers. An attempt at code sending and receiving in the Code Practice Room met with failure due to the poor "fists" and ears of the Cooper Tech-ers.

At last the score was posted. Cooper had again nosed out Brooklyn College and Cornell in addition. Individual point scores for this historic event were as follows: Bernard Olcott, 256; Peter Kolesnikoff, 253; Louis Zernow, 244; David Horowitz, 225; Weser Stevens, 215.

This year the team will lose only two of its veterans, Kolesnikoff and Zernow, by graduation. However, the "rookie" material has shown several promising men who might partly fill the gaps left by loss of "Pete" and "Lou."

Veterans remaining on the team include Dave Horowitz, Bern Olcott, Wes Stevens, Tony Vescuso and Walt Vignini. Bob Kohal, a Freshman this year and hence ineligible for the Varsity, has at times beaten every one else on the team and he will no doubt be valuable to future Cooper teams.

The results of the Student Council's Blanket Fee Poll have indicated that the Rifle team is a very potentially popular activity. A request was sent to Dean Bateman in an effort to secure space in the school in which to build a range with money appropriated by the Blanket Fee. This plan, however, was not deemed to be workable.

AWARDS IN ATHLETICS

VARSITY "C"

BASKETBALL

SHELDON LANG
JACK KENNEDY
AL KRASNOFF
HERMAN LONG
JOHN MAHONEY
CHARLES SCHAFFNER
AL SKORSKI

RIFLE

DAVID HOROWITZ
ROBERT KOHAL
BERNARD OLCOTT
LESTER STEVENS
LOUIS ZERNOW

MANAGERS

Swimming
CHARLES DOHN

Basketball
DAVID HOROWITZ

Interclass Basketball
HOWARD KUTZELMAN

Baseball
PETER SAGONAS

MINOR "C"

BASKETBALL

FRANK BAUM
IRVING SCHEINBART
FRANK SMOLINSKY
ABE ROSEN, Assistant Manager

RIFLE

WALTER VIGNINI
ANTHONY VISCUSCO

NUMERALS

INTERCLASS BASKETBALL

Sophomores—Class of '40

BREITMAN
BOUMA
DONNELLY
HORSTING
KLEIN
MENG
QUART
RAPPAPORT

SWIMMING and WATERPOLO

Swimming Meet—Day School
Waterpolo Tournament—Night

BINDMAN
BREITMAN
DEUTSCH
HAMEL
HIGGINS
MORROW
MULLIGAN
PLUM
RICHMOND
ROSENBAUM
SORENSON
STEWART

BASEBALL

Sophomores—Class of '40

DONNELLY
HANST
HORSTING
LACOSS
LONG
SCHAFFNER
SERRIGNI
SKIBA
SLUTSKY
SPOOL
TAZELKA
VON STORCH
WINTONIAK

Amusements of Tomorrow

TODAY at the Cooper Union, the extra-curricular activities provide a means of recreation and a form of enjoyment to the students participating therein. In the World of Tomorrow, improved forms of enjoyment will provide recreation for all people.

An indication of the type of amusement that will prevail in the World of Tomorrow is found at the 1939 World's Fair. Here amusements, entertainments and special events will be developed on an unparalleled scale. The amusement sector will contain all conceivable kinds of shows, spectacles, pageants, devices, rides, and marine features. It will contain a world of playgrounds, reading rooms, work rooms, puppet shows, and many other means to engage the youngsters while their elders investigate the more worldly amusements.

The New York Fair does not plan to have the customary midway with a series of parallel roads and cross streets. Instead, the main thoroughfare will be a two mile loop flanked on one side by the various amusements and on the other, by the east shore of Meadow Lake.

Within the two mile loop will be rides and spectacles, roller coasters, rodeos, pageants, round-the-world trips, rocket cars, and the like. In addition, there will be the Sport of Tomorrow—spectator-participating sports. Scattered along the lagoon shore will be foreign villages, restaurant pavilions, boat houses, and various water amusements. In both of these sections, attractions will be spaced by trees, shrubs, flowers, and grass to produce an open, park-like effect.

The upper end of the sector will be devoted to drama, concerts, motion pictures, folk festivals, and similar activities of artistic merit. This section will be dominated by the State Amphitheatre which will be built at the head of the lagoon. On the marine stage of this amphitheatre, pageants, symphony concerts, and other large scale artistic spectacles will be presented. Show people from all over the world will be in strenuous competition, racking their brains to invent new thrills and wonders.

There will be special events commemorating national and foreign holidays and the birthdays of famous men. Native artistic talent will be imported for some occasions. The various national weeks emphasizing health, safety, etc., will be observed at the fair. An extensive sports program will be arranged featuring both commercial and non-commercial activities with the latter type being preferred.

One of the features of the sports program will be the celebration of the one-hundredth anniversary of organized baseball. Many amateur and professional games will be held on the fair grounds, and the climax will be a game between the New York Yankees and the New York Giants.

Just to the east of the immense marine stage, the Fair is erecting an amusement focal exhibit on the broad plaza that will lead to the amusement zone. This focal exhibit will be designed to epitomize the spirit of amusement. Here will be replicas of the famous amusement features of past fairs—the Eiffel Tower of Paris's 1889 Exposition, Little Egypt of the World Columbian Exposition, San Francisco's Stella, Sally Rand of the Century of Progress Fair, and many others.

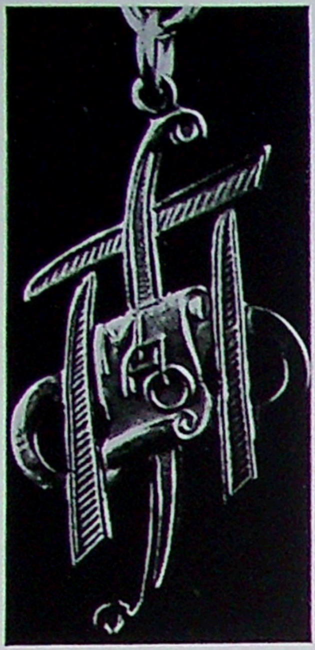
In short, the New York World's Fair of 1939 will have an amusement section that will allow the whole world to play. Plans for the fair have been laid out in such a manner that great aquatic displays may be presented in addition to the demonstrations on land. There are numerous air fields in the metropolitan area and the city is enlarging North Beach airport adjacent to the fair site. Thus, facilities on land, sea, and air are available for the display of the Amusements of Tomorrow.

The large amount of space devoted to amusements and sports is in keeping with the theme of the Fair for it is expected with further technological advancement that the human race will be able to devote less and less time to work and more and more time to worthwhile amusements. Spectator-participating sports, one of the proposed features of the Fair, are an indication of what the future holds. Music and opera presentations in vast marine amphitheaters, beautiful awe inspiring pageants, athletic exhibitions, spectacular ballet dancing on a huge scale, are all indicative of the vast vistas that shall be open to both the creation and reception of the art of tomorrow.

THE PROPENSITY OF MANKIND TO BAND TOGETHER IN CLANS IS SATIATED ON A HIGHER LEVEL BY PROFESSIONAL SOCIETIES AND FRATERNITIES. PEOPLE WITH COMMON IDEALS AND PROBLEMS DISCUSS THEM TOGETHER. THEIR AMUSEMENTS TOO ARE PARTICIPATED IN ON A GROUP BASIS. AT THE FAIR, TOO, GROUP AMUSEMENTS ARE PLANNED.

SOCIETIES

MU ALPHA OMICRON



Mu Alpha Omicron is the honor society of Cooper Union. To become a member of the society a student must have attained a high scholastic rating and must possess qualities of character and leadership. The official society emblem is an interwoven design of an integral sign, pi and the symbol for infinity. The integral sign represents the summation of all knowledge and may be interpreted as scholarship. Pi is a transcendental character of the members of Mu Alpha Omicron. The symbol for infinity represents the far-reaching vision and forethought of the brothers.

At the present time only members of the Institute of Technology are eligible for admission to the society, but in the near future it is expected that members of the Night Engineering Courses will also be eligible. In the Spring of the year, the faculty submits a list of the men who stand in the upper eighth of the Junior class scholastically. These men are interviewed and voted upon by members of the society. Those deemed eligible are inducted and from these men the succeeding year's officers are chosen. In the late Fall, the faculty submits a second list of Seniors who stand in the upper fourth of the class scholastically. These men are also interviewed, voted upon and inducted.

The chancellor of the society is Robert Egbert, a Chemical Engineering student. Robert was elected secretary of his class in his freshman year and president in his junior year and has been a member of various clubs and committees about the school.

A student of Civil Engineering, Robert Hammond performs the duties of Bursar of the society. Smiling Bobby is well-liked by his classmates. In his sophomore year he was elected treasurer of the class. During his spare moments he likes to indulge in a game of contract bridge in the lunch room.

Harold Kandiner, a Ch.E., is the Society's Scrivner. Harold has held a Schweinberg scholarship during all of his

These are the boys who have what it takes.

four years at school, which is a good indication of his ability in his studies. He is noted for turning in a graphical solution to any and all problems.

George Landau and Paul Weber are the remaining two members who were inducted into the society at the close of their junior year. George Landau has been class secretary in his sophomore year and is now treasurer of the Senior class. He also holds the post of vice-president of the A.I.Ch.E. Paul Weber is the only Electrical Engineering student member. Modest and unassuming, Paul is popular with his classmates. He is an exceptional scholar having held a Schweinberg scholarship for four years. Paul also holds down the job of Physics Laboratory assistant in the Night School.

Four men, all members of the Chemical Engineering section, were admitted during the middle of their senior year.

John Kordak is one of the hardest workers in the class and often succeeds where others fail.

Jack Rennolds is always ready with a unique solution to a difficult problem. He is vice-president of the Senior class and last year was secretary of the A.I.Ch.E.

Charles Miller is another brilliant man in his class work. Last year he was treasurer and this year is president of the A.I.Ch.E.

Herbert Siezholz is not only a scholastic leader of the Ch.E. section but is also noted for his excursions into the Art School.

MATH CLUB

President
T. BERLIN

Vice-President
S. ARONOW

Secretary
H. FEDER

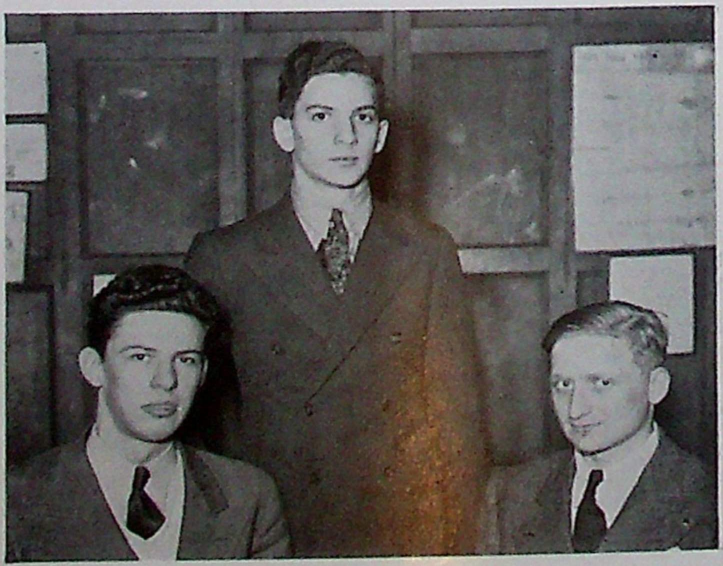
Treasurer
H. ROBBINS

THERE is at least one society that still cleaves to a branch of pure science. This is the Mathematics Club of the Day Tech. Here, a group of more or less normal students gathers in Room 23 to discuss their own theories and pet problems. Usually, the speakers are students, and the lectures informal, although occasionally the club manages to get an outside speaker of renown.

The wave of contests that is inundating the country prompted the officers of the club to inaugurate one here also. Students were invited to submit papers, either at meetings or in writing, on some mathematical topic. The response to the contest was very encouraging, and it will most likely be made a permanent feature of the club's activities.

The officers of the club are Ted Berlin, president; Saul Aronow, vice-president; Harold Feder, secretary, and Harry Robbins, treasurer.

After the regular expenses of the club were paid, and these included the Freshman Slide Rule prize, and the Calculus medal, the money left over was used to buy some more books for the Math Club's collection in the Library, which is the pride and joy of every member.



A. S. C. E.

UNDER the capable guidance of the well-known and well-liked Professor Fred E. Foss, the members of the Cooper Union Student Chapter of the American Society of Civil Engineers enjoyed a varied program for the current year. Outstanding was an illustrated talk by Mr. Joshua Barney, president of a well-known construction company. He spoke on the architectural possibilities of reinforced concrete. Mr. Barney advised the young engineers to learn early to appreciate the problems of the architect to the end that there might be closer harmony between architecture and engineering.

Two field trips were taken under the auspices of the parent society. Those who visited the Sixth Avenue Subway construction reported a collapsible metal form used for the concrete work. Those who tramped around in the snow at the World's Fair site brought back many stirring memories. Clusters of huge three-inch anchor bolts protruding from large masses of concrete bore mute testimony to the fact that World's Fair Engineers were faced with the problem of holding the huge Trylon down.

Many of the members attended lectures given for their benefit by the the parent society.

Other noteworthy speakers addressed the chapter throughout the year. Mr. Hayden discussed the rigid frame bridge and Mr. Ole Singstad explained the features of the Mid-Town Queens Tunnel.

As a fit culmination to the activities of the society a testimonial dinner was tendered Professor Fred E. Foss. With a full course chicken dinner under their belts, nearly 100 alumni, faculty and students turned to listen to the speakers introduced by fun-provoking John Kachura. Long, short and medium-size speeches, some of which ran into world peace and politics, all expressed the admiration and respect with which his faculty friends and students revere Prof. Foss.

Professor Fred E. Foss

A TRUE ENGINEER
Of souls as of steel.
A DREAMER—
Capable of god-like creation.
A BUILDER—
Of men as of structures.
A TEACHER—
Understanding and true.
A FRIEND—
Knowing is never to forget.
A MAN—

President
J. KACHURA

Vice-President
J. HUTCHINS

Secretary
M. AQUINO

Treasurer
MAX STRAUSS

A. I. Ch. E.

President
M. KUSEVICH
Vice-President
H. BAHRENBURG
Secretary
J. GUMBRECHT
Treasurer
W. FITZPATRICK

THIS year marks the tenth year of the existence of the Cooper Union Chapter of the American Institute of Chemical Engineers. Both a day and a night chapter were organized in 1926 but in 1932, the night chapter was discontinued. Increased interest on the part of the night students led to a re-establishment of the night chapter in 1936 so that at the present time, there are two chapters in the school.

The meetings of the day school chapter were featured by the presentation of several student papers and by the annual freshmen reception. At the latter affair, Dr. H. C. Parmalee of the McGraw Hill Publishing Company was the guest speaker. Sharing the spotlight on the program was the lecture on Literature Researches by Prof. Wottawak which was ably portrayed by Joseph Koosman.

The night chapter held several meetings also. At one of these, Dr. Harold Urey of Columbia University spoke on the Use of Isotopes in Chemistry and at another, Dr. E. R. Jette spoke on methods used in Metallurgy.

A meeting of the student chapters of the A.I.Ch.E. in the metropolitan area held at City College was attended by the branch.

A. I. E. E.
NIGHT BRANCH

THE Night Student Branch of the American Institute of Electrical Engineers has been in existence for four years. That it has fulfilled the purpose for which it was organized is evidenced by the fact that its membership has steadily increased.

Technologically speaking, a graduate in Electrical Engineering is fit; from a practical point of view he is not. The A.I.E.E. through field trips, lectures and informal get-togethers not only presents the other side of the picture to its members, but also provides an excellent opportunity for establishing important contacts.

The success of last year prompted the officers to renew the program of student talks and many fine papers were presented among which are recalled "Electrical Subway Construction," by W. Klein; "The Manual Telephone," by G. M. Phillips, and "Frequency Control in Power Systems," by W. G. Vreeland.

A field trip was made to the Long Lines Department of the A. T. & T. Co., where the mysteries of transatlantic telephone communication were laid bare. Attendance at one or two of the Headquarters lectures during the Winter Convention rounded out the program.

President
W. VREELAND

Secretary
W. KLEIN

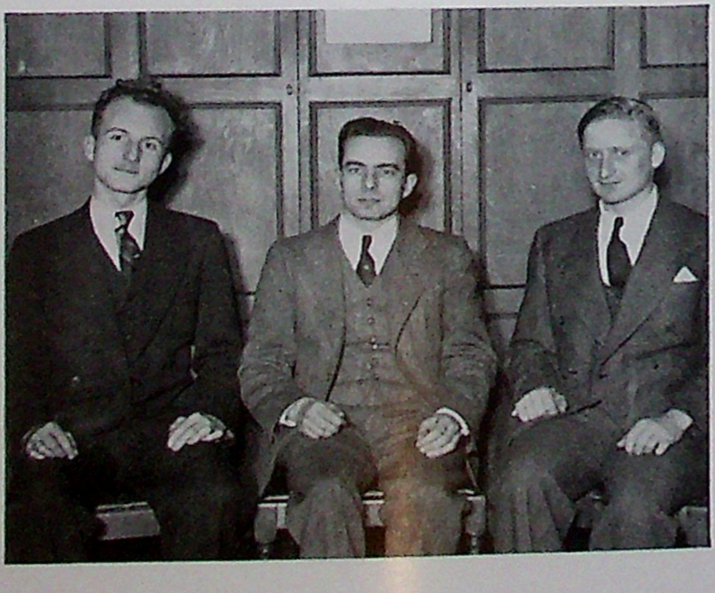
Treasurer
W. WEBSTER

A. I. E. E.
DAY BRANCH

President
H. GAILLARD
Vice-President
W. McSHEA
Treasurer
S. ARONOW

BECAUSE day students are blind, the day branch of the A.I.E.E. is organized to give them sight. By blind, we mean they have no practical experience in the profession. The day branch attempts to solve this problem by arranging both field trips, and lectures by men in the profession.

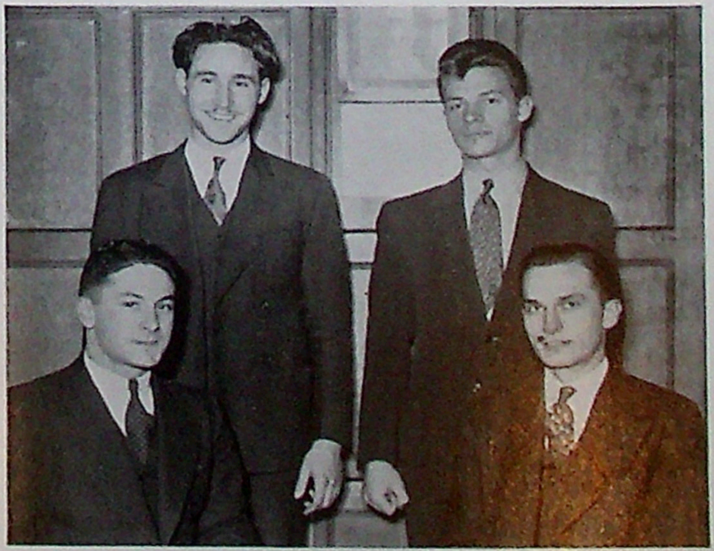
Up to the middle of the year, we had proceeded quite successfully toward the attainment of our object. Through the efforts of Mr. Tallman, our faculty adviser, Hamilton Gaillard, president, and Saul Aronow, treasurer, the membership was raised to 23 members. The coordinated efforts of William T. McShea, vice-president and Raymond Bendett, secretary, resulted in a program which included a talk on electric motors by Charles Cambridge, a discussion of the Young Engineer and His Job by Professor Starr, an explanation of the mysteries of the Q meter by A. G. Merlin and a talk on the principles of operation and applications of the cathode ray oscillograph by Daniel Ozsvath. Interposed between the talks was a visit to the Hudson Avenue Plant of the Consolidated Edison Company where large scale power generation opened our eyes.



A. S. M. E.

IT has been the aim of the Cooper Union Student Chapter of the American Society of Mechanical Engineers to bring to the student those phases of engineering endeavor which are not treated in the prescribed curriculum. It is not possible for the faculty in the limited time at their disposal, to bring to the student more than the barest fundamentals. A working knowledge of the application of the theories and principles to engineering practice is of vital importance. The value to the student of these methods rather than text-book formulae cannot be over-emphasized. With this in mind the officers have arranged a program of activities that would help fill the gap in their engineering education. The program includes plant visits and the presentation of student papers. Meetings were distinguished by their informality and new friendships were made.

The Night Student branch of the A.S.M.E. has been in existence for eighteen years. During this time it has fully served the purpose for which it was created—and we can proudly point to the fact that the percentage of student members enrolled here is greater than the percentage enrolled in much larger institutions.



President
J. SCHILLER

Vice-President
A. MATIUK

Secretary
A. BUDDE

Treasurer
D. RUSS

EX POST FACTO

EX
POST
FACTO

BARBARA BLAND
EMMABELLE COOK
CHARLES DOHN
CHARLES HAUCK
CAMILLE MARTEN
WILLIAM T. McSHEA
KENNETH NEUMAN
FRANK VANEK
WILLIAM G. E. VREELAND

CULMINATING one of its most successful years, the Cable pauses to bestow a great honor upon certain of its staff. This treasured award is membership in Ex Post Facto, the honorary society of the Cable. Inaugurated several years ago, its purpose has been to single out those members of the able staff who by dint of self-sacrificing, tireless, and meritorious effort have carried on the principles and traditions upon which the Cable was founded sixteen years ago.

Many and intriguing are the technical details associated with the production of a college yearbook. Photography, typography, layout, design; these are but a few of the many specialized features taken into consideration. It is only natural then that each newly appointed Cable staff be lacking to a certain degree in the wide experience their task demands of them.

With this poignant fact in mind, one does not wonder that the original intent of the founders of the society was that the wearers of Ex Post Facto keys act in the capacity of guides and advisers to their successors on subsequent Cables. The improvement in the Cable proper and the smoother efficiency which has marked the production of more recent editions bears mute testimony of the invaluable service which has been rendered by Ex Post Facto in this direction.

Thus tangible recognition of a job well done is given to a deserving few. May the meaning of the key they will wear serve as a constant reminder of the trust placed in them.

LAMBDA TAU

SAUL ARONOW
RAY BENDETT
TED BERLIN
ED HOFMANN
JULIUS PORT
FRANK QUATTLANDER
GEORGE ROLLY
JERRY SANDERS
MAX STRAUSS
MURRAY WEINTRAUB

OF the original seven young men who formed the honor society, Lambda Tau, of the Pioneer, but one now remains in school. He probably well remembers the Saturday morning in 1934 when they decided to organize the society. Their purpose was to recognize suitably those who gave their time and effort in producing the weekly paper.

The aim of Lambda Tau is to promote cooperative, friendly relationships among the members of the staff of the Pioneer and to strive for the highest standard of collegiate journalism.

This year the membership in Lambda Tau has grown to almost forty, including both active and honorary members. Heading the list of twenty-eight honorary members is Professor Norman L. Towle, faculty adviser of the Pioneer. Most of the honorary members have graduated, but they are still, nevertheless, part of the organization because of their contributions while on the staff.

The officers, themselves active members, are elected by the active members at a meeting held shortly after the first month of the school year. For the current year, Jerry Sanders was elected to the chancellorship. Other officers are Ray Bendett, vice-chancellor; Marvin Weiss, exchequer, and Saul Aronow, recorder.

In order to increase the distinction of membership in the society, this year's students voted to amend the eligibility rules. The amendment now requires would-be members to participate on the newspaper in an editorial capacity for at least ten issues.

Chapters

ALPHA
Cooper Union Night
BETA
Brooklyn Polytech
GAMMA
N.Y.U. Commerce

DELTA
Cooper Union Tech

EPSILON
Brooklyn College

Fratres in Facultate

Prof. H. C. Enders
Prof. Karl Hauptmann
Otto C. Puller
C. George Kreuger
R. J. Kunz
Kenneth E. Lofgren

Fratres in Collegio

George F. Ackert
Hugo Aglietti
Richard C. Barrett
James V. Brady
Gregory Brooks
Edward H. Burger
Leonard R. Caputo
John Coffey
William P. Cole
Lucien H. Cook
Tunis L. Egbert
Howard Fensterer
William J. Fitzpatrick
Bernard A. Fleck
Thomas J. Frascella
T. Nelson Gilbert
John Gumbrecht
Oscar Kummer
George Misson
Carl Mistron
William D. Moore
Herbert Neidhammer
Charles E. Olson
William G. Pfann
George M. Phillips
Lawrence Picone
Vincent J. Reale
Eugene A. Rosenberg
Fred W. Schmitz
Gustave W. Sedat
Edward G. Walsh
James M. Allaire
Robert Brown
Casimir V. Cichaski
August W. Dege
Albert L. Dunn
George A. Everson
Joseph C. Fegan
John J. Fiala
John W. Gruol
John V. Harrington
Charles R. Kenny
Edward Kondrajian
Walter T. Koroshetz
Bernard F. McLaren
William T. McShea
Jack Meng
S. Eugene Michaels
William S. Moore
Lothair H. Rowley
Charles E. Schaffner
Harry G. Taylor

OMEGA DELTA PHI

Thirty five years ago, seven Cooper Union Night School students, among them Karl Hauptmann, now a professor in the Physics Department, founded the Omega Delta Phi Fraternity in order to strengthen and preserve the friendships they had made at school. Since then the Fraternity has expanded until now it includes five chapters at four different colleges and an alumni organization for the older members.

The Alumni Association was formed in 1908 and five years later the brotherhood was granted its Articles of Incorporation by the State of New York. The original night school body was granted a charter in 1915 as the Alpha Chapter of Omega Delta Phi, Incorporated. In the same year at Brooklyn Polytechnic Institute the Beta Chapter was formed and granted a charter.

In 1925 still another chapter was formed, composed of students of the School of Commerce of New York University.

When the Day School of Engineering was established at Cooper Union it was only natural that a new chapter be set up, and in 1928 the Delta Chapter in the Institute of Technology was granted its charter.

The Incorporated Body admitted the latest, and we hope not the last, chapter, Epsilon of Brooklyn College, in 1935.

Omega Delta Phi admits its new chapters only after careful and detailed examination, and so it also selects its sons. Before any applicants are admitted into the Chapter, they must show definite evidence of their scholastic ability by passing with satisfactory grades all of their first year subjects. They are also examined to determine whether their ideas and ideals correspond with those upheld by the Fraternity.

At the beginning of the school term, each of the Chapters invites the incoming freshmen to visit the rooms and become acquainted with the upper classmen. At these receptions, every possible form of diversion is provided, so that all who attend enjoy themselves thoroughly. It is the custom to ask some outstanding Frater to explain briefly the set-up of the Fraternity, its ideals and its

A popular pastime. P.S. He sank it.

purposes. Although the freshmen are urged to give serious thought to the advantages of fraternity membership, no attempt is made to rush anyone into applying for admission.

Since the requirements of Cooper Union are very strict and a large portion of the students are also employed in some profession, there is necessarily very little time to seek friends or to seek other amusement. The opportunity to make social contacts at Cooper outside of the usual classroom meetings is greatly restricted by the limited campus activity which is available. However, one need not go through school without the benefit of this comradeship as the Fraternity gives the opportunity to round out the students' social life.

Omega Delta Phi is not entirely a social organization for it assists its members to meet the scholastic requirements of Cooper Union. The mutual assistance of the members helps to settle a problem which is bothering one without waiting until he goes to class. The upper classmen hold coaching classes for any lower classmen who feel weak in any subject, thereby greatly assisting the members of the Fraternity to pass their subjects.

For several years Cooper Union has awarded the Gold "C" to those students who are of outstanding leadership in extra-curricular activities. The Silver "C" is an even higher award, requiring three times as many points. This has been won by four of the members of Omega Delta Phi, while many of its men have won the Gold "C." Omega Delta Phi men have always stood high in classes and in extra-curricular activities, and have continued to bring credit to the Fraternity by their accomplishments in later life.

The Fraternity rooms of Alpha and Delta Chapters are conveniently located at 4 St. Marks Place, just one block from the Foundation Building. The other chapters hold their meetings in their rooms closer to their colleges. The rooms are well adapted to the needs of the members. Though not luxuriously furnished, they are large and comfortable. Here the members may relax in the comfortable chairs before or after

OMEGA DELTA PHI
ALPHA

classes or participate in a friendly game of pool.

The Fraternity holds a formal meeting once a month during the school term. In addition to numerous parties and smokers, there are two formal dances and an annual convention.

The formal dances, held each Spring and Fall at one of the leading hotels in the city, are looked forward to with great anticipation as the high spots in the Fraternity's social program. At these dances, the members of all the Chapters of Omega Delta Phi have the opportunity to make and renew acquaintances.

At the end of each school year, in June, the Annual Convention is held, at which the brothers of Omega Delta Phi gather from all parts of the continent. It is here that the brothers who have lost contact with their fellow fraters renew old friendships and make new ones. The program of the Convention consists of outdoor sports, indoor sports, a business meeting, and a banquet. Tournaments are held in tennis, golf, swimming, and baseball. There is keen rivalry between the chapters for the possession of the chapter banner which is awarded to the winning team. After a full day of sports, a short meeting is held, followed by the banquet.

The members of Omega Delta Phi have always been known as men of character, respected by their fellow students and the instructing staff. Their high standards and ideals continue to show themselves by the responsible positions they attain in their chosen professions after graduation. Many fraters have migrated to distant points, and incoming mail bears such postmarks as South America, Europe, and every part of North America. The Fraternity is justly proud of their achievements in the engineering profession.

In its thirty-five years of existence, the Fraternity has expanded its membership nearly one hundred fold. Though the roster and activities have been expanded, the principles established by the seven original founders have continued unchanged. And so Omega Delta Phi Fraternity goes on, seeking more new friends, and creating new traditions for coming members to uphold.

OMEGA DELTA PHI
ALPHA

ΦΙ ΣΙΓΜΑ ΩΜΕΓΑ

Chapters

ALPHA
Cooper Union

BETA
Newark College

GAMMA
New York University

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John J. Currey
Edward A. Miller
William T. Petersen
Charles O. Roth, Jr.
Joseph J. Tanzola
Allan L. Tarr
Miles H. Van Buren
Christian T. Weaver

Officers

CHARLES A. HAUCK
Grand Master

FRANK VANEK
Deputy Grand Master

JOHN KING
Exchequer

ANTHONY ANCONA
Recorder

Fratres in Collegio

Stephen Alessi
Joseph V. Badami
Herbert A. Bahrenburg
George J. Bartelheim
Oscar Chaber
Joseph Chovanec
Herman J. Decker, Jr.
Fred P. Drechsler
Clinton Eckel
Charles Grebert
Edward E. Grohse
Frederic C. Hamel, Jr.
Edward H. Hofmann
Elbert W. Jaudon
Edward J. Jehle
Henry J. Koch
Edward C. Krukiel
Frank Larkin
Joseph Larkin
Andrew Levada
Lawrence Lindquist
Frank McGinnis
Patrick McGiver
William Neary
Henry Nelson
William V. Pesce
Peter Poveromo
George P. Quinn
Anthony Squitieri
Robert F. Stewart
Paul Vestigo
William A. Walker
Edward J. Walsh
William F. Webster
Emil F. Wield
Herman Woebcke
George Zaharakis

PHI SIGMA OMEGA

Since its inception just twelve years ago, the Phi Sigma Omega Fraternity has labored to uphold the philosophy and the ideals of its founder. It has striven to gather beneath its fold, men of kindred spirit and similar beliefs. It has endeavored to provide a place where these men can meet each other, where they can discuss and decide questions relating to themselves, a place that is homelike, pleasant, comfortable and satisfying to their needs, a place where they can study and prepare their work in peace, and where they can speak above a stage whisper when thrashing out a problem. In short, Phi Sigma Omega has tried to give its members a house that is as near to a home that is humanly possible.

In this it has succeeded. The Phi Sigma Omega Fraternity House at Thirty-nine Seventh Street, though not luxurious in the strict sense of the word, is luxurious in the friendship and companionship that only comfortable surroundings and similar interests can inspire. Here, in a pleasant atmosphere, surrounded by photographs of the Cooper Union and its Faculty and Instructing Staffs, by pictures, insignia and banners of men who were once here, who did the same things, who had the same troubles but who somehow managed to succeed, its members enjoy a pleasant homey atmosphere, wherein they can study or rest.

The social side of life is extremely important to a student attending college at night. His days are occupied with his work, whatever it may be, and his evenings are filled with his classes. His week-ends are fully employed in performing the necessary tasks which were assigned him by his professors during the week. Thus, having no time to see his friends nor to seek amusement, the student stores up a tremendous amount of energy which must be dissipated in some manner. The PSO Fraternity endeavors to supply this need by conducting various social functions during the school year.

The first and most important affair of the year is of course the Fall Formal Dance on the Saturday after Thanksgiving. This year's dance was held at the Hotel Savoy-Plaza, on Fifth Avenue, just off Central Park,

The Masters Council

Manhattan. This place is a favorite stamping ground for PSO men. The undergraduate brothers attended en masse. The graduate brothers, not to be outdone, issued forth with their wives from their homes (leaving the children orphans for one night), in the wilds of New Jersey, Westchester, the far-flung frontiers of Long Island and Connecticut, and all stops between (even Brooklyn), assembled their legions and marched on the Savoy-Plaza amid the shuffle and tap of dancing feet and the clink of ice in long, cool glasses. After venting their spleen on the ballroom floor and pumping the hands of their old classmates, they retreated wearily homeward.

The next event on the social program was the New Year's Eve Party. This was held in the Fraternity House. Though a complete social success, there was only one complaint made by nearly all those attending. The house was too crowded. The brothers were too many in number and their friends only added to the general confusion and gayety.

The event next in chronological order was the Tri-Chapter Banquet. This banquet is a joint affair of the three metropolitan chapters, Alpha of Cooper Union, Beta of Newark College of Engineering, and Gamma of New York University. This dinner is conducted chiefly to bring the members of these chapters into a closer union with each other and to make new friends. The 1938 Tri-Chapter Banquet was staged at the Cribari Brothers Winery in Manhattan. Here amid a medieval atmosphere of monkish costumes, the members sat at long tables, surrounded by huge oaken casks containing some of the choicest of domestic wines, and partook of a real European repast washed down with deliciously smooth wines and champagnes from the orchards and vineyards of our own country. The three chapters turned out the largest number of members ever to attend this annual affair. After the tables were cleared and cigars were distributed, the entertainment was provided by a few speakers, but mostly by short sketches staged by each of the chapters.

The social function next on the calendar was the Spring Dance. This affair is conducted by the Metropolitan Grand Lodge for the benefit of the three metropoli-

The Pledgees pose formally.

tan chapters. The Dance was held at the Hotel Victoria in Manhattan. Here, to the rhythmic, swingy melodies of Bob Nelson, that entrepreneur from New Jersey, the members, both undergraduates and graduates brought their wives and other sweethearts, and a vast number of their friends and danced their way into the wee sma' hours of Sunday, June Fifth. Amid a cozy atmosphere of softly shaded lights, regal surroundings, comfortable furniture and more than ample space for dancing or otherwise, the brothers disported themselves, renewed old friendships and made dates to "come up and see me sometime" for the ensuing summer.

The night of Monday, June Thirteenth saw the final business meeting of the year. At this time all the loose ends which were left dangling were gathered up piece by piece, duly considered and then settled to our complete satisfaction. This meeting also witnessed the election of officers for the coming year. There ensued some lively battles and discussions concerning the relative merits and shortcomings of the various members nominated to the Masters Council of the Chapter. Finally all was peaceably settled, congratulations were given and elections were closed.

The final social function of the fiscal year consisted of a party conducted at the Fraternity House the night of June Thirtieth. To the tuneful melodies of the nation's best orchestras, received via the radio, and amid gayly decorated rooms, and in a thoroughly congenial atmosphere the fraters and their friends celebrated the end of another successful year of Alpha Chapter.

Then followed the only serious part of the evening's activity—the installation of the new Masters Council. With solemnity befitting so serious an occasion, the retiring Grand Master administered the oath of office to the newly elected Masters, binding them to uphold the ideals, principles, and customs of Alpha Chapter of the Phi Sigma Omega Fraternity as propounded by the Founders and to which we have faithfully adhered for two years and a decade.

Thus, another year has gone, another barrier surmounted, another chapter to which we can sincerely write FINIS to a job well done.

The Brothers gather in a group.

ALPHA MU SIGMA

Officers

MURRAY SCHWARTZ
Prior

JACK BERGER
Vice-Prior

AL LAUFER
Scribe

HERMAN WEINSTEIN
Exchequer

Fratres in Collegio

Julius Agin
Jack Berger
Charles G. Cambridge
Julius Chudow
David Horowitz
Herbert Last
Al Laufer
Bernard Lichtenstein
Ralph Maslow
Harry A. Roistacher
Abraham Rosen
Murray Schwartz
Herman H. Weinstein

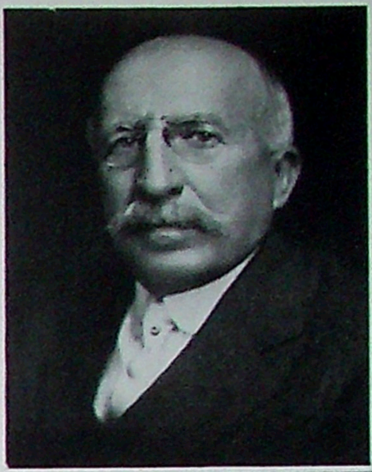
THE Alpha Mu Sigma Fraternity looks with pride at 24 years of active service spent in the furthering of fraternalism and scholarship.

The fraternity, formed in 1914 by a small group of enterprising Cooper Union undergraduates, has since grown to be a national fraternity consisting of twenty-one chapters.

This year the fraternity following a policy of progressive action can boast of two major achievements: the granting of a charter to a new chapter, Upsilon at Brooklyn College; and the award to Tau Chapter at George Washington University of being the best scholastic group in the University.

Because of the policy of initiating only men who have proven their scholastic ability at Cooper Union, the Alpha Chapter consists of many of our leading men at the Institute, both in studies and in extra-curricular activities.

ALUMNI ASSOCIATION



Henry D. Williams, Pres.

Philip S. Anthes, Treas.

THE membership of the Alumni Association is composed of graduates and former students of all the departments of Cooper Union. There are Chapters for each department. The affairs of the Association are administered by the elected officers and a Board of Governors. The officers are elected at a regular meeting of the Association, but the Board of Governors is composed of representatives of the various Chapters, and the members are either appointed or elected by them in proportion to numerical strength of the respective Chapters.

The activities of the Association consist of the publication of an Alumni News; the maintenance of an employment bureau; the maintenance of an Alumni office; and in addition it holds both social and lecture meetings throughout the school year. The various activities are conducted either by the elected officers or by committees. The elected officers have specific duties and the committees are appointed as the need arises. The committees are appointed by the Board of Governors to whom they report at the regular monthly meetings.

The present Alumni Association was formed by the consolidation of the separate associations of the different departments. The separate organizations were entirely independent of each other, except that they were represented on the Alumni Federation which also functioned as an independent body.

The history of the alumni associations that flourished in the Cooper Union show that the original organizing work was conducted along the lines of the different departments.

The organization now known as the Cooper Union Alumni Association came into being at a general meeting of all the individual associations, held on May 11, 1936, in the Physics Lecture Room. At that meeting the Constitution of the new association was accepted, and officers elected. From October, 1936, until the present time, the Association has completely fulfilled each one of its averred objectives.

The employment bureau is one of the most popular activities, both with the Alumni and the students. The employment bureau was taken over by the Alumni Association, but an attempt is being made to help all of the employment activity.

The publication of the Alumni Association is known as the Cooper Union Alumni News. This paper, which started with the October, 1936 issue as a modest four-page affair, has developed through a series of steps into an eight-page magazine with an illustrated cover. The cover design is taken from the 1934 Cable, and is the work of Irving H. Papiroff of the Architectural Class of 1937. The Alumni News is mailed to all the members of the Alumni Association. The News is published monthly throughout the school year from October to May.

The officers of the Association are the same as last year, except for two new officers. The President, Henry D. Williams, G.S. '85, is a prominent patent lawyer. He is a past President of the General Science Alumni of the Alumni Federation of the Cooper Union Alumni Association. The First Vice-President is Christian Weaver, Chem. '03, a popular teacher of organic chemistry at Cooper Union for 25 years. The Second Vice-President is Henry J. Queen, Tech. '33, who also is editor of the Alumni News. The Secretary is Adolph J. Wohlgemuth, E.E. '31, who was re-elected, and who was the Chairman of the Reorganization Committee that drew up the Constitution of the new association. The Treasurer is Philip S. Anthes, Arch. '33, who was re-elected and who has been Chairman of the Founder's Day committee for several years.

The outstanding event of the year's activities was the Founder's Day celebration, which was held on February 12th. In the morning, the bust of Peter Cooper, in the Hall of Fame at New York University, was decorated. In the afternoon, a short ceremony was performed at the statue of Peter Cooper in Cooper Square. The climax of the celebration, however, was in the evening, with a dinner-dance held in the Great Northern Hotel.

Here the attendance included the officers of the Association, Mr. Gano Dunn, President of Cooper Union, Mr. J. Charles Riedel, G.S. '98, as Toastmaster, Dean George F. Bateman, Director Austin Purves of the Art Schools, Miss Helen Zachos, Instructor of the Class of Oratory and Debate, several other members of the Faculty, and a goodly attendance of Alumni with their wives and friends.

During the past year the Cooper Union Alumni Association has had two open meetings, at one of which their President, Mr. Henry D. Williams, showed moving pictures of his cruise to Iceland, North Cape, Norway, Sweden, Russia, etc., as well as reflected enlarged pictures of still photographs and post cards of various parts of his trip, including attendance at the International Congress of Comparative Law at The Hague. At the other meeting, a talking moving picture entitled "Heat and Its Control," was given.

The smoker and reception to the graduates of 1938 will be the closing affair of the Alumni Association for the season.

SENIOR ROSTER

NIGHT SCHOOL OF ENGINEERING

CHEMICAL ENGINEERING

Broad, Walter C.	25 East 45 St., Bayonne, N. J.
Dolgow, Morris	236 East 5 St., New York City
Edman, Walter W.	813 71 St., Brooklyn, N. Y.
Franz, Henry W.	90-24 144 Place, Jamaica, L. I., N. Y.
Greenfeld, Charles	1694 54 St., Brooklyn, N. Y.
Gumbrecht, John O.	215-16 Murdock Ave., Queens Village, L. I., N. Y.
Haratonik, William	34-56 30 St., L. I. C., N. Y.
Katz, Ruth	1105 College Ave., Bronx, N. Y.
Owendoff, Robert	474 72 St., Brooklyn, N. Y.
Pearlstein, Joseph	2227 83 St., Brooklyn, N. Y.
Schmutzler, Alfred F.	29-31 164 St., Flushing, L. I., N. Y.
Skrek, Frank	56 Poulson Ave., Ridgefield Park, N. J.
Tobey, Louis A.	2527 Valentine Ave., Bronx, N. Y.

CIVIL ENGINEERING

Alexanders, John	2751 Hone Ave., Bronx, N. Y.
Gertler, James	1112 Gerard Ave., New York City
Koretsky, Sanford	545 West 158 St., New York City
Sigman, Sam	129 Goerck St., New York City

ELECTRICAL ENGINEERING

Ezell, Edward J.	299 Fairmount Ave., Jersey City, N. J.
Hornickel, Herman C.	2274 Ellis Ave., Bronx, N. Y.
Kettleman, Effingham V. B.	
Levada, Andrew R.	2134 Ryder Ave., Brooklyn, N. Y.
Phillips, George M.	145 Columbia Ave., North Bergen, N. J.
Vreeland, William G. E.	7200 Ridge Blvd., Brooklyn, N. Y.

MECHANICAL ENGINEERING

Ackert, George F.	21-65 28 St., Astoria, L. I., N. Y.
Chichester, Kenneth J.	28-05 43 St., Astoria, L. I., N. Y.
Fitzgerald, George V.	699 Chauncey St., Brooklyn, N. Y.
Oldman, Richard D.	10 Monroe St., New York City
Schiller, Jacob D.	215 East 54 St., Brooklyn, N. Y.
Welling, Morris	496 East 95 St., Brooklyn, N. Y.

INSTITUTE OF TECHNOLOGY

CHEMICAL ENGINEERING

Baum, Samuel	3332 Wilson Ave., New York City
Chen, Alwin B.	607 West 139 St., New York City
Dorfman, Harold A.	164 2 St., Mineola, N. Y.
Duch, Stephen	532 Bergen St., Newark, N. J.
Egbert, Robert B.	139-28 87 Ave., Jamaica, L. I., N. Y.
Kandiner, Harold J.	3604 Olinville Ave., Bronx, N. Y.
Koosman, Joseph G.	437 Piaget Ave., Clifton, N. J.
Kordak, John A.	503 Richford Ter., Linden, N. J.
Krasnoff, Albert	319 Pesline Ave., Newark, N. J.
Landaw, George	631 East 26 St., Paterson, N. J.
Miller, Charles B.	6655 Fresh Pond Rd., Ridgewood, N. Y.
Purr, Michael M.	2993 Zulette Ave., Bronx, N. Y.
Rennolds, Philip J.	3805 Lyme Ave., Brooklyn, N. Y.
Siesholtz, Herbert W.	142 Goldsmith Ave., Newark, N. J.
Stadnitski, Robert K.	130 West 166 St., Bronx, N. Y.
Thoman, Louis H.	8215 Colonial Rd., Brooklyn, N. Y.
Zernow, Louis	619 Linwood St., Brooklyn, N. Y.

CIVIL ENGINEERING

Dohn, Charles W.	57-03 Catalpa Ave., Ridgewood, N. Y.
Goldstein, Abraham	487 Montgomery St., Brooklyn, N. Y.
Hammond, Robert J.	163 Wilkinson Ave., Jersey City, N. J.
Kachura, John	127-03 115 Ave., So. Ozone Park, L. I., N. Y.
Lang, Sheldon L.	2149 East 21 St., Brooklyn, N. Y.
Mazurkiewicz, Sigmund	228 Prospect Ave., Brooklyn, N. Y.
Rosen, Isidore S.	1808 Prospect Pl., Brooklyn, N. Y.

ELECTRICAL ENGINEERING

Agin, Julius .... 846 Fulton St., Brooklyn, N. Y.
Cambridge, Charles G. .... 731 Hegeman Ave., Brooklyn, N. Y.
Cozine, Harold E. .... 369 3 St., Brooklyn, N. Y.
Dunkelman, Lawrence A. .... 142 Graham Ave., Paterson, N. J.
Eiwen, Charles J. .... 60 East 179 St., New York City
Gaillard, Hamilton F. .... Valley Cottage, N. Y.
Goldman, Samuel .... 1837 West 6 St., Brooklyn, N. Y.
Goodman, Jerry .... 41 Lott Ave., Brooklyn, N. Y.
Herman, Jacob .... 699 Georgia Ave., Brooklyn, N. Y.
Holdsworth, Woodrow .... 2210 Harmon St., Brooklyn, N. Y.
Ipsen, Sigurd .... 3749 Richmond Rd., Richmond, S. I., N. Y.
Kerstein, Joseph D. .... 1556 38 St., Brooklyn, N. Y.
Knopfle, William H. .... 65 E. Seaman Ave., Freeport, L. I., N. Y.
Lehrer, Alex c/o Gubin .... 200 Second Ave., New York City
Loughlin, Bernard D. .... 297 Union St., Jersey City, N. J.
McShea, William T. .... 33-21 89 St., Jackson Hts., L. I., N. Y.
Merlin, Abraham G. .... 1445 St. Johns Pl., Brooklyn, N. Y.
Ozsvath, Daniel .... 169 Greenridge Ave., White Plains, N. Y.
Pierce, George C. .... 780 St. Johns Pl., Brooklyn, N. Y.
Weber, Paul J. .... 1726 Grove St., Ridgewood, L. I., N. Y.

MECHANICAL ENGINEERING

Dmitroff, George A. .... 510 West 135 St., New York City
Dreshner, Harold L. .... 372 Elton St., Brooklyn, N. Y.
Matiuk, Alexander .... 133 East 87 St., Brooklyn, N. Y.
Peirano, John J. .... 1684 West 10 St., Brooklyn, N. Y.
Robinson, Dale C. .... 419 East 5 St., New York City
Wild, Oldrich .... 401 East 77 St., New York City

DAY ART SCHOOL

Albert, Arthur .... 236 Lewis Ave., Brooklyn, N. Y.
Bland, Barbara .... 109-13 209 St., Queens Village, L. I., N. Y.
Bartlett, William F. .... 287 Palmer Road, Yonkers, N. Y.
Buchholz, Walter .... 1902 East 18 St., Brooklyn, N. Y.
Cook, Emmabelle .... 241 Passaic Ave., Hasbrouck Hts., N. J.
Cummins, Margaret J. .... 59 North Bergen Pl., Freeport, L. I., N. Y.
Hoeffler, Virginia .... 1655 Townsend Ave., Bronx, N. Y.

Janeway, Juliana.......341 East 79 St., New York City
Low, Howard.......611 West 158 St., New York City
Marten, Camille G.......118 Park Ave., Rutherford, N. J.
Maxon, John.......20 North Broadway, White Plains, N. Y.
Mulford, Alice.......3658 Waldo Ave., Bronx, N. Y.
Munson, Theresa.......388 Hancock St., Brooklyn, N. Y.
O'Hanian, Grace.......330 Third Ave., New York City
Post, Chester.......3225 Corlear Ave., Bronx, N. Y.
Roberson, Margaret.......123 Waverly Pl., New York City
Rohe, Robert K.......44 Buchanan Pl., Bronx, N. Y.
Rosenberg, Herbert.......5104 Fort Hamilton P'kway, Brooklyn, N. Y.
Sanders, Jerry.......206 East 7 St., New York City
Simonelli, Joseph J.......184 Knickerbocker Ave., Paterson, N. J.
Stengren, Jon.......95 Lakeview Ave., Rockville Center, L. I., N. Y.
Tilley Margaret.......21 Mansfield Ave., Darien, Conn.
Valentine, Vincent.......205-14 104 Ave., Hollis, N. Y.
Wythe, Catherine.......42-02 222 St., Bayside, L. I., N. Y.

NIGHT SCHOOL OF ART

Carmellino, Sebastian J.......367 5 St., Brooklyn, N. Y.
Eron, Theodore.......640 Riverside Drive, New York City
Firstenberg, Theodore.......375 East Mosholu P'kway, Bronx, N. Y.
Golden, Phil.......1214 Wheeler Ave., Bronx, N. Y.
Rabinowitz, Nathan.......3320 Mermaid Ave., Brooklyn, N. Y.
Schaller, Harold.......3447 80 St., Jackson Hts., L. I., N. Y.
Sladovich, Frank.......615 12 St., Union City, N. J.
Trapani, Joseph.......225 East 39 St., New York City
White, Emanuel G.......33 Adams St., East Rockaway, N. Y.

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BUSINESS AND INDUSTRY

OUTSTANDING, unprecedented participation of Business and Industry in the World's Fair is a sign that future employers of Cooper students are quick to see the possibilities of modern projects. The 1939 World's Fair has placed several restrictions upon how Business and Industry may participate in order to make the Fair an organic whole, truly illustrative of how the Industry of today will help build the World of Tomorrow. Yet despite these restrictions business tycoons are quickly making plans to participate in the Fair.

Preparations for the 1939 World's Fair were begun in 1935 with the appointment of committees to lay out the land. In 1937, two years before the opening, business firms had already rented land for their exhibits and had begun to build. Once the plans were set on paper and all contracts had been written, actual construction proceeded at an unbelievable rate. Where only a short time ago there was only a barren stretch of land, there now exists a group of modernistic buildings completed and furnished. Already machinery is being installed.

Every World's Fair features bigger and better machines capable of doing more things faster and more accurately. The increasing applications of electricity and the advancement of engineering science makes possible feats that would have been considered miraculous a few years ago. At the touch of a button, huge machines are set into action performing tasks that inspire the imagination. In the 1939 World's Fair, Business and Industry combine to portray machinery as the faithful servant of mankind, economically producing those gods which mankind needs most.

In the exhibits of Business and Industry, we find definite indications that the World of Tomorrow will be a finer, more luxurious world based upon an abundance of goods made accessible to all—a true economy of abundance.

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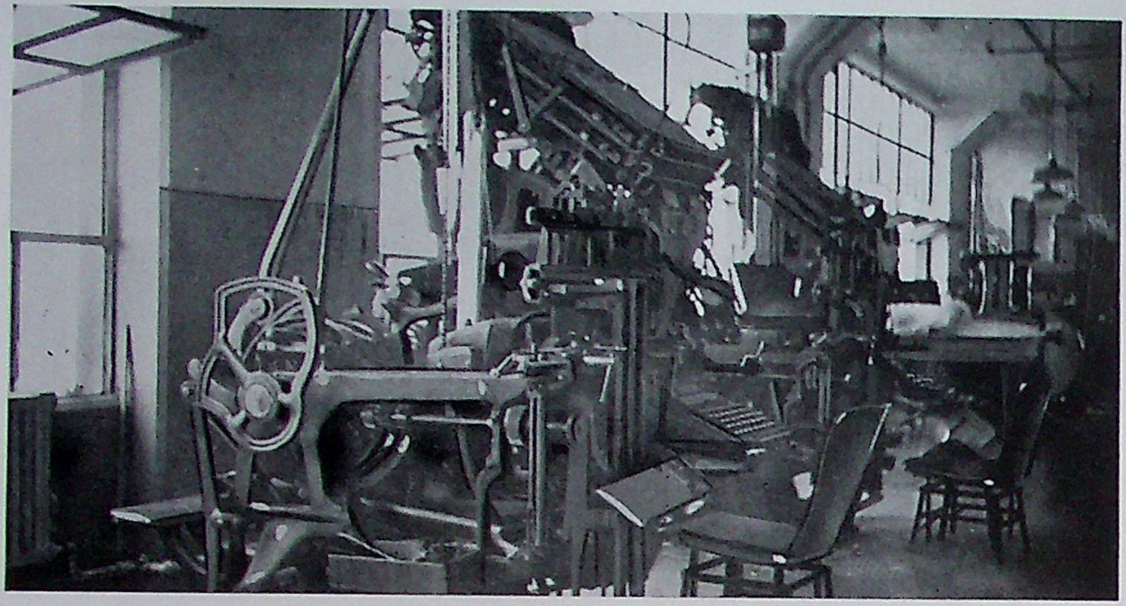

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ACKNOWLEDGMENTS

THERE are some, in addition to our regular staff, who have assisted us materially in the preparation of this volume. We wish to acknowledge and extend our gratitude to:

Sylvia Rosen, Sales Executive of the Comet Press, who cooperated with the editors so freely, lending her wide experience and technical skill in the production of the book;

Samuel Chernoble, who generously extended to us the facilities of the Comet Press for editorial work;

Ralph Gershaw and Beatrice Turk of the Arthur Studios for their splendid cooperation with our Photo Editor;

Frances Cook, Judy Marten, and Grace—(Charlie Hauck's girl friend), for their secretarial and editorial assistance;

John "Scottie" McKechnie and Garret "Garrie" Halpin, for the many courtesies they extended in making our "office life" more pleasant;

The many students who submitted articles, even though some were too long and others too short.

THE TEXT OF THIS ISSUE OF THE CABLE IS SET IN VOGUE LIGHT WITH THE HEADS AND INITIALS IN TEMPO LIGHT. THE PAPER IS WARREN'S 100 LB. WHITE GLOSS COATED. THE ENDPAPERS ARE HAMMERMILL WHITE HANDMADE OFFSET. THE COVER, MANUFACTURED BY THE DAVID J. MOLLOY CO., SHOWS THE THEME SYMBOLS OF THE WORLD'S FAIR, THE TRYLON AND THE PERISPHERE. THE EDITION HAS BEEN SET ON THE LINOTYPE AND PRINTED BY THE COMET PRESS, INC. AT THEIR PLANT IN BROOKLYN . . . NEW YORK.